

Total Maximum Daily Load (TMDL) Program



Note: This information is provided for reference purposes only. Although the information provided here was accurate and current when first created, it is now outdated.

The materials which follow were developed by FACA workgroups for discussion by the TMDL Federal Advisory Committee. They are the Committee's chosen method by which to deliberate the issues under consideration. These papers are not to be misconstrued as representing EPA policy or guidance. Similarly, the Final TMDL FACA Report does not necessarily represent the views of EPA.

TMDL Federal Advisory Committee Total Maximum Daily Loads (TMDLs)

June 11-13, 1997
TMDL FACA Committee Meeting
in Milwaukee, WI

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Total Maximum Daily Load (TMDL) Program

MEMORANDUM

TO: Members of the Federal Advisory Committee on the TMDL Program

FROM: Members of the Listing Workgroup

DATE: 5/23/97

RE: Listing Workgroup Materials and Discussion Questions

Attached are materials developed by the Listing Workgroup since the Galveston meeting in late February. The Listing Workgroup met over the last three months to discuss priority issue areas. Special attention was given to the following topics: (1) 303(d) List Comprehensiveness and Definition (Issues I(A) and (D)); (2) 303(d) Integration with other Clean Water Act assessments; (3) List Prioritization; and (4) the Implications of Being on the 303(d) list. These discussions are summarized in the attached May 23, 1997 draft of the discussion paper titled **Summary of Listing Workgroup Discussions (March-May 1997)**. This paper is not intended to be an exhaustive survey of all options available for a given issue area nor does it capture in detail the views of all Workgroup members; rather, it has been provided by the facilitator to **summarize, attempt to synthesize, and (where appropriate) provide a policy or legal context for Workgroup teleconference discussions.**

Most important for our Milwaukee meeting, the Workgroup drafted five alternative **Listing Process Proposals**. Each proposal lays out a possible framework for organizing listing activities and addresses several key issue areas, including:

- **Defining** the 303(d) list;
- List **Comprehensiveness**;
- Waters **not listed** under 303(d);
- 303(d) list connection to **other Clean Water Act lists/reports**;
- **Scheduling** listed waters for TMDL development [this is related to **Setting Priorities/Targeting** waters for action];
- **Implications** (for sources and water quality management agencies) of listing a water under 303(d); and
- **Managing** the List/Delisting/Relisting.

Although the proposals share many features, their differences are highlighted by one

or two main ideas. For example, Option 1 includes impaired and threatened waters and continues to list waters in attainment with water quality standards after implementation of a TMDL. Option 2 lists only impaired waters but provides for earlier delisting. Option 3 is similar in structure to Option 2 but moves all waters impaired solely by nonpoint sources or natural conditions to a 303(d)(3) list. Option 4 lists only waters for which TMDLs are considered feasible. "Expected to meet" waters are not listed. Option 5 lays out EPA's current approach.

The five **Listing Process Proposals** are attached immediately behind this memorandum for your consideration. Please keep in mind that the Workgroup is seeking your advice on the most **desirable overall approach**. It may be most helpful to focus on the essence of each proposal, recognizing that some of the details provided will likely be modified at a later date. Several of the proposals include a description of what the Listing Workgroup is calling "the Segmented Approach." The Segmented Approach is a list management strategy in which listed waters fall into one of several categories (or list segments) based on their "waterbody status." Waterbody status is dynamic. Each segment would be subject to different management/regulatory approaches designed to encourage certain source actions. A few of the more important segments envisioned have been described in these proposals to give you a flavor of the types of State/EPA obligations and source requirements that might be associated with certain circumstances. Again, this is **by no means an exhaustive or refined list of segments**. It is included to add substance to the Segmented Approach and to spark discussion.

Question for the Committee: Which of the five proposals should be endorsed by the Committee? Which aspects of your preferred proposals are especially attractive? Which, if any, aspects of your preferred proposal are of concern? Which aspects of the proposals you did not select are of particular concern?

We encourage you to review the proposals carefully and to use the discussion paper as a reference document. We look forward to discussing these proposals with you in Milwaukee.

Total Maximum Daily Load (TMDL) Program

May 23, 1997 DRAFT

SUMMARY OF LISTING WORKGROUP DISCUSSIONS (March-May 1997)

NOTE: italicized portions of the text were drafted by the facilitator for the Listing Workgroup's consideration. The Workgroup has not yet had an opportunity to review, discuss, and/or modify this language.

I. PURPOSE OF THE 303(d) LIST

(A) COMPREHENSIVENESS OF THE LIST

1. How comprehensive should Section 303(d) lists be?
2. Should they include threatened waters? [NOTE: see Issue II(B)(2) for a discussion of this issue]
3. Should they include waters impaired by pollutants for which TMDL development is considered infeasible, e.g., waters impaired by atmospheric deposition?

DISCUSSION: Currently, EPA considers the 303(d) list to be a comprehensive identification of all impaired and threatened waters not meeting water quality standards even after the implementation of required pollution controls, regardless of the pollutant source or feasibility of TMDL development. Constraints on "feasibility" may be linked to policy, technical, social, or other economic factors and, under current EPA thinking, are best weighed during priority setting or targeting activities.

One Workgroup member asked whether waters for which TMDLs are deemed infeasible should be listed given that the statute requires TMDLs to be developed for every listed water. Another member pointed out that while the statute does not specify deadlines or schedules for developing TMDLs, recent court decisions suggest that EPA and/or the States may be vulnerable to lawsuits for failing to develop or implement TMDLs, including those that are considered infeasible. Several Workgroup members suggested that in many States, these lawsuits may deflect scarce program resources from other important water quality management activities, including TMDL development.

Other Workgroup members pointed out that "feasibility is in the eye of the beholder" and that States and EPA should be encouraged to solve significant, complex, seemingly infeasible water pollution problems such as acid rain contamination.

OPTIONS:

1. Continue to list all impaired waters. Address feasibility issues later in TMDL program development (e.g., during the priority ranking and targeting activities as described in Section 303(d)(1)(A) of the Clean Water Act and in the regulations at 130.7(b) June 24, 1997(iii)).
 2. Do not list waters for which TMDL development is determined to be infeasible *by the State (with EPA oversight)*.
 3. Do not include such waters on the 303(d) list but track them on a separate list.
-

4. Should the 303(d) list include waters known to be impaired solely by natural, uncontrollable sources?
-

DISCUSSION: EPA's current approach to 303(d) listing holds that a State should consider a water's full range of possible stressors or pollution sources for 303(d) listing purposes. Therefore, even waters impaired by natural (uncontrollable) sources (such as nitrogen loading from lightning strikes or wildlife fecal contamination) should be listed, *unless the State's water quality standards call for the natural condition to become the criterion and there are no anthropogenic contributions.*

Bearing this in mind, Workgroup members considered the following: if States are required to develop TMDLs for all waters on the 303(d) list, does it follow then that Congress did not intend States to list waters that are impaired by natural sources which do not respond to traditional control technologies? Some Workgroup members noted that, as with the feasibility situation described above, listing such waters may expose the State and EPA to lawsuits and deflect valuable program resources from other water quality protection activities.

Others remarked that impairments that are not amenable to existing controls may be addressable in the future and should therefore be listed. At least one Workgroup member noted that it also may be difficult to know with certainty that all contributing sources are natural and uncontrollable. This person pointed out that some waters that appear to be impaired by natural sources may also be impacted by controllable anthropogenic sources. Such waters should be included on a State's 303(d) list so that anthropogenic sources contributing to the loading can be limited.

OPTIONS:

1. EPA should develop regulatory language giving States the option of deciding whether or not to list waters impaired by natural sources.

2. States should continue to list all non-supporting waters, including those impaired by natural, uncontrollable sources.
 - a. States may want to develop a sublist that separates these waters from others that are more amenable to available TMDL controls.
 3. States should be encouraged to include a "natural conditions" clause in their water quality standards. This clause provides a listing exemption for waters impaired solely by natural sources *and provides for adjustment of criteria in order to control anthropogenic inputs.*
 4. States should institute a UAA or segment-specific criteria to deal with natural conditions on a segment-by-segment basis.
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5. Should the 303(d) list include waters impaired by legacy pollutants such as DDT or chemicals in contaminated bottom sediments?
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DISCUSSION: Legacy pollutants found in leachate contaminated with banned pesticides or in bottom sediments in heavily industrialized areas contribute to waterbody impairments, including fish flesh contamination (which lead to fish consumption bans and advisories). Such pollutants pose several important challenges: (1) sources of impairment may be difficult to identify (e.g., because they are diffuse or may no longer be active); (2) severity of impairment may vary not as much with source activity as with climatic and geophysical conditions; and (3) regulatory controls of such pollutants may be outside of the Clean Water Act authority. EPA's current approach holds that waters impaired by such pollutants are to be included on the 303(d) list.

OPTIONS:

1. States should continue to list all impaired waters, including those impaired by legacy pollutants. [No-change option]
 - a. States should be encouraged to assure prevention of additional contamination where possible and to use other regulatory authorities (e.g., RCRA and CERCLA) regarding remedial actions.
 - b. Natural recovery is the preferred approach for contaminated sediments, and waters impaired by such legacy pollutants should be assigned a lower priority for TMDL development (e.g., during priority ranking and targeting exercises) until progress toward recovery can be assessed and additional appropriate strategies are identified (e.g., through research or new technology development).
 - c. *Controls on controllable pollutants with similar effects on beneficial uses should be tightened to address the additive and*

synergistic effects of legacy and non-legacy pollutants.

2. EPA should develop regulatory language giving States the option of deciding whether or not to list waters impaired by legacy pollutants.
3. Waters impaired by legacy pollutants should not be included on the 303(d) list.
 - a. Waters impaired by legacy pollutants should be tracked on a separate Planning list.
 1. Waters having water column impairments (e.g., from contaminated runoff) should be tracked separately from those affected by contaminated bottom sediments.

OPTION DISCUSSION: *At least one Workgroup member expressed a strong concern about this option. This individual pointed out that contaminated sediments are the media in which one finds many serious water quality pollutants and that waters with contaminated bottom sediments should be listed under 303(d). This individual expressed further concern about the serious effects of contaminated bottom sediments on beneficial uses and the adverse impact of such pollution on activities such as subsistence fishing.*

4. States should institute a UAA or segment-specific criteria to deal with legacy pollutants on a segment-by-segment basis.

(B) OVERPROTECTIVE/UNDERPROTECTIVE/QUESTIONABLE STANDARDS:

1. How should State section 303 (d) lists address waters for which existing water quality standards (WQS) are (suspected of being) overprotective?
2. How should State section 303 (d) lists address waters for which water quality standards are (suspected of being) underprotective?
3. How should State section 303 (d) lists address waters for which water quality standards are likely to change?

DISCUSSION: 303(d) listing decisions may be difficult, vulnerable to challenge, and/or premature if existing water quality standards (WQS) are (suspected of being) overprotective, underprotective, or in flux.

Overprotective standards may include, among other things: (1) numeric criteria based on overly-conservative assumptions regarding the negative impacts to designated uses; (2) criteria exceeded in natural conditions; and (3) standards that are unattainable because the costs for achieving the standard are disproportionate to the resulting benefit.

Underprotective standards may include the following: (1) numeric criteria that do not protect the most sensitive indigenous species; (2) designated uses that do not reflect actual uses of the waterbody; (3) incomplete standards (i.e., numeric and narrative criteria, waterbody uses, or anti-degradation requirements are missing); and (4)

numeric criteria based on underconservative assumptions regarding negative impacts to beneficial uses.

Under the Clean Water Act, WQS are reviewed on a triennial basis and can be revised at any time. WQS revisions may impact the 303(d) listing status of a given waterbody (e.g., if a standard is relaxed so that the water no longer violates it, the water can be removed from the 303(d) list) as well as the type, cost, and pace of TMDL development and implementation activities. The TMDL program therefore has a great interest and stake in assuring that WQS are appropriately set.

EPA's current policy directs States to list all nonsupporting waters, including those suspected of having insufficient standards. In making listing decisions, States should rely on all components of the WQS (including narrative criteria and/or designated uses). This approach is intended to help override any deficiencies or shortcomings in a given standard. However, if a State determines that a water quality standard was not properly set at the time of listing, it can revise the standard at a later time and de-list the water or give it a higher priority for TMDL development, as appropriate.

Insufficient water quality standards cannot be "cured" by the TMDL process. Still, TMDL listing (and development) activities may help identify insufficient standards *and encourage States to more regularly apply all components of a water quality standard, including narrative criteria and beneficial use support.* This is likely to occur often enough that it needs to be anticipated in program planning, even though EPA water quality standards development and TMDL program activities are distinct.

OPTIONS FOR ADDRESSING (POSSIBLY) OVERPROTECTIVE STANDARDS:

1. Include all nonsupporting waters, including those with (or suspected of having) overprotective standards, on the 303(d) list.
2. Include all nonsupporting waters on the 303(d) list. Assign waters with (or suspected of having) overprotective standards a low priority for TMDL development.
3. Conditionally exclude from 303(d) listing waters having (or suspected of having) overprotective standards and place them on a planning/"parking lot" list. States should perform a Use Attainability Analysis (UAA), develop site-specific criteria under EPA's water quality regulations, or revise WQS for such waters, as appropriate. Waters that do not support revised WQS should be moved to the 303(d) list.
4. Conditionally include waters having (or suspected of having) overprotective standards on the 303(d) list. Encourage States to quickly review water quality standards and listing determinations for such waters, possibly by setting a deadline for initiating and/or completing the revision process. States should de-list such waters if standards are revised in a way that supports current activities.
5. States should develop a narrow 303(d) list and a broader planning list. The narrow 303(d) includes those segments determined to have violated appropriate standards and for which TMDL development is a high priority. The planning list includes waterbodies that violate standards that are (or may be) overprotective. States should develop UAAs or site-specific analyses for all waters on the planning list (before a TMDL is initiated?).

- a. Develop a detailed process to track reasons for placing impaired waters on the broad planning list.
6. In conjunction with whatever option is selected, above, EPA should encourage States to seek and consider the input of other agencies and the public on the cost and benefit of achieving standards for which a violation has been recorded. This input should be solicited during public review of 303(d) listing decisions and should be evaluated at least during triennial water quality standards reviews.

OPTIONS FOR ADDRESSING (POSSIBLY) UNDERPROTECTIVE STANDARDS:.

1. Include all nonsupporting waters on the 303(d) list.
2. Include all waters not meeting standards on the 303(d) list. Assign waters known to have or suspected of having underprotective standards a high priority for TMDL development.
 - a. Encourage States to revise underprotective standards.
3. Develop a narrow 303(d) list and a broader planning list. The narrow list would include those segments determined to have violated either appropriate or underprotective standards and for which TMDL development is a high priority.
 - a. Encourage States to revise underprotective standards.
4. *EPA should require that States apply narrative criteria, including additive risks of toxic pollutants and conventional pollutants (e.g., DO and temperature), and guidance values for protecting fish, wildlife, human health (e.g., fish consumption rates for subpopulations).*
5. *EPA should require States list on the basis of beneficial use impairment.*
6. *EPA should prohibit States from establishing listing criteria that undermine independent application of narrative criteria and beneficial uses.*

[NOTE: Options 4-6 were added at the written request of a Workgroup member. They have been discussed generally by the Workgroup.]

7. In conjunction with whatever option is selected, above, EPA should encourage States to seek and consider the input of other agencies and the public re. including all designated uses (including the most sensitive uses) when setting WQS. This input can be solicited (in part) during 303(d) list public comment periods.

(C) INTEGRATION AND CONSISTENCY OF CWA ASSESSMENTS:

What should be the relationship of the Section 303(d) list to other lists and assessments of threatened and impaired waters (e.g., 305(b) Water Quality Assessments and 319 Nonpoint Source Assessments) developed under the Clean Water Act? Should these listing and assessment requirements be consolidated?

DISCUSSION: Section 303(d) and other CWA lists/assessments already have certain relationships established in EPA regulations and guidance. For example, EPA selected the 303(d) list's two-year listing cycle in 1992 to coincide with the 305(b) listing cycle. Regulations direct States/Tribes to consider waters identified in 305(b) and 319 reports for 303(d) list inclusion. EPA guidance documents (e.g., the 1991 "Guidance for Water Quality-based Decisions: The TMDL process") also state that States should consult Section 304(l) and 314 lists in preparing the 303(d) list. *Other means of collaborating across Clean Water Act programs (such as focusing water quality program efforts on waters identified as "high priority" on multiple lists/reports) may exist informally but are not actively promoted.*

There is overlap among the waters appearing on various lists and may be compelling reasons (including State resource savings) to consolidate listing and assessment activities. However, the 303(d) list has a different purpose and a different set of criteria for listing when compared with these other lists. Below are a few challenges to integrating these lists.

1. Underlying List Purpose. The lists serve different purposes. For example, the 305(b) list is intended primarily to inform Congress and the public about the nation's progress in meeting water quality goals. The 319 list, which identifies waters adversely affected, or potentially adversely affected, by nonpoint sources, and the 314 list, which identifies impaired lakes, have been used to identify project funding needs. The 304(l) list was a one-time identification of toxics-impaired waters. The 303(d) list identifies waters that do not meet water quality standards, even after the application of required pollution controls.
2. Schedules. At the present time, the 303(d) list is synchronized only with the 305(b) report (and, in fact, the two can be submitted together to EPA). The 305(b) list, however, is about to move to a five-year cycle, with annual updates. If the 303(d) list is to coincide with the 305(b) report, it also would have to shift to a five-year schedule, possibly also with regular interim updates. *These lists can still be integrated in many practical ways, even where submittal schedules do not coincide.*
3. Data Needs. The 303(d) list is the only ongoing list with a direct link to regulatory requirements for additional controls (for point sources) on listed waters and may therefore require a higher degree of rigor than lists used for other purposes. Data quality and quantity needs for 303(d) listing may be stricter than for other lists. *Some* waters on other CWA lists (e.g., 319) may be based on anecdotal and not assessed information. *These* waters may not be appropriate for inclusion on the 303(d) list. Also, because some of these lists were developed several years ago, the current health or quality of the waterbodies may not be reflected in the available data.
4. Definitions. To work in concert, the different lists would need to use the same definitions of key terms. The different lists' definitions of "impaired," "threatened," "monitored," and "assessed," for example, would need to be reviewed and possibly revised for consistency.

OPTIONS (related to Synchronizing Lists):

1. The 303(d) list stays on a two-year cycle and should use other CWA lists as "source materials." [No-change option]

- a. *All CWA lists should be integrated substantively.*

OPTION DISCUSSION: One Workgroup member pointed out that scarce resources can be better used by ensuring that all CWA lists stem from a comprehensive database of information. [Note from facilitator: At this time, no single EPA database holds data for all CWA lists/reports.]

2. The 303(d) list should move to a five-year cycle to coincide with 305(b) list.

- a. States should have the option to update their 303(d) lists annually.

3. The 303(d) list moves to a five-year cycle but should be updated annually, as appropriate.

OPTION DISCUSSION: Workgroup members pointed out that synchronizing CWA lists may save valuable resources associated with listing and/or assessment/reporting activities. The 303(d) and 305(b) lists appear to have the greatest degree of overlap in terms of purpose and content and so would be the logical starting point for synchronizing activities. Several members noted that moving to a five-year schedule may enable States to free some resources from list development and increase the pace of TMDL development, implementation, water quality monitoring, and/or other water quality protection activities. Other members pointed out that changing to a five-year schedule would also have implications for the way States manage the 303(d) list. For example, if the 303(d) list moves to a five-year cycle, States may need to develop a more dynamic list management process that accommodates interim, perhaps annual, changes in 303(d) status for individual waterbodies.

4. The 303(d) list moves to a five-year cycle after a few more 2-year cycles.

OPTION DISCUSSION: At least one Workgroup member suggested that State TMDL programs may not be ready to move to a five-year cycle. This individual pointed out that States have had little experience with 303(d) lists and may benefit from focusing their 1998 (and possibly 2000) cycles on improving their lists. This schedule would also allow time for EPA to propose and take public comment on the regulatory change (i.e., moving to a five-year cycle) without adding uncertainty to the next two listing cycles.

5. To the extent that the 303(d) list is synchronized with other Clean Water Act lists,

- a. EPA should develop clear guidance stating (or reconciling) differences in data collection/analysis protocols between 303(d) and those other CWA lists.

- b. EPA should develop clear guidance stating differences between

definitions of key terms between 303(d) and other CWA lists.

OPTIONS (related to Data Quality and Appropriateness):

6. Professional opinion/judgment that can be used to justify/prioritize awarding grant money for work on a specific water(e.g., under 319) should also be a sufficient basis for 303(d) listing.

OPTION DISCUSSION: The Workgroup discussed the challenges of consolidating lists that may be based on data of variable quality. One Workgroup member noted that (for example) State data collection protocols for 319 listing may not be stringent enough to meet 303(d) listing requirements. Other Workgroup members suggested that any waterbody that receives federal 319 funding should be among those identified under 303(d) listing requirements as needing action to meet water quality objectives. It may be appropriate for EPA to revise its listing criteria for 319 and 314 to reflect this emphasis.

7. Section 319 waters which support their water quality standards should not be included on the 303(d) list.

DISCUSSION: Criteria for listing waters under Section 319 appear to vary State-by-State. For some States, waters may be listed solely on the basis of evaluative or anecdotal evidence. One Workgroup member remarked that many fully supporting waters appear on 319 lists and that listing such waters under 303(d) would be counterproductive.

(D) DEFINING THE LIST:

What is the 303(d) list: Is it a "TMDLs to-do list," a list of all remaining water quality problems in the State, or something else?

DISCUSSION: The statutory requirement for listing under 303(d)(1) is:

- A. "those waters...for which the effluent limitations required by Section 301 [pertaining to 1977 deadline for BPCT and secondary treatment for POTWs] are not stringent enough to implement any water quality standard applicable to such waters.
- B. "those waters... for which controls on thermal discharges [under section 301] are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

The statutory requirements for listing do not address some of the basic questions that arise in the listing program. For example, the statute does not address the circumstances (if any) that would justify removing waters from the list. If waters are to be removed from the 303(d) list once controls are established, an incentive might emerge to assure that controls are established promptly. The list could then focus TMDL development and implementation efforts on waters that have not yet received attention in these areas. On the other hand, it is important to track progress in water quality-limited waters and the 303(d) list may be an appropriate mechanism for such tracking. *Keeping all water-quality limited waters on the 303(d) list might also help ensure that all required controls are fully implemented.*

The 303(d) list could track all impaired waters, including those for which additional needed controls have already been established but which have not yet achieved water quality standards. (This would be a change from the current EPA approach.) The 303(d) list might also track maintenance, as well as progress toward attainment, of water quality standards once the controls are in place.

Another consideration is whether to list those waters for which controls to achieve standards are not currently available or feasible. The statute does not seem to allow for an exception in such cases. Some Workgroup suggested that if the list were considered to be a "TMDL to-do list," some special treatment for these waters may be needed. Others disagreed with this basic characterization of the 303(d) list and further disagreed that there may be situations where controls are not available or feasible.

The Workgroup/Committee's understanding and coming to some basic agreement on the basic purpose or definition of the 303(d) list could have broad implications for several aspects of the 303(d) listing process, possibly including:

1. specifying the kinds of impaired waters (if any) not needing 303(d) listing (e.g., possibly, "expected to meet waters," waters impaired by natural conditions);
2. applying anti-degradation policies (to protect waters from further degradation);
3. providing incentives to sources in a watershed to implement controls to stay off or get off the 303(d) list;
4. using the list to provide incentives for States to develop and fully implement a TMDL and to focus public attention on actions needed;
5. tracking progress of the TMDL toward its goals;
6. assuring the water continues to attain WQS;
7. managing the 303(d) list (e.g., frequency of compiling the list, the "de-listing" process) and workloads;
8. determining whether to recommend establishing related lists or tracking mechanisms to supplement 303(d); and
9. determining how to effectively and efficiently integrate 303(d) list development with other CWA listing and tracking programs.

OPTIONS:

1. The 303(d) list is a list of all waters for which technology-based controls required by CWA, State, Tribal, or local effluent limitations, or other legally required pollution controls are not stringent enough to meet WQS. [No-change]

(1)(b) Same as above, except the list has a special "segment" for waters where it is currently infeasible to develop/implement an adequate TMDL.

2. The 303(d)(1) list is a comprehensive list of all waters that fail to meet water quality standards or that meet water quality standards because a TMDL is in place. The list clearly identifies the parameter(s) for which each waterbody segment is limited. For management purposes (i.e., to identify clearly where TMDLs are needed), the 303(d) list may be broken into various sublists, possibly including:
 - Waters not meeting water quality standards and for which a TMDL has not yet been developed;
 - Waters which are expected to meet standards due to other controls but which have not yet attained standards;
 - Waters having approved TMDLs but which do not yet achieve WQS; and
 - Waters that meet WQS as a result of the TMDL. [Further discussion may be needed to determine whether and how additional tracking to assure "maintenance" can be undertaken.]

OPTION DISCUSSION: Many Workgroup members expressed strong interest in the segmented approach as a management tool. The Workgroup could not agree initially on which types of waters should be included on the list.

One Workgroup member initially noted that for at least one State, water quality-limited designation is a permanent waterbody status and that an inclusive 303(d) list most effectively protects future uses of a water (per the anti-degradation component of water quality standards as applied to Tier I waters).

Others in the Workgroup considered this approach problematic. These members offered that in their States there may be a stigma or specific source activity limitations associated with being on the 303(d) list. As a result, permanent 303(d) designation would remove the incentive for point and non-point sources to undertake voluntary actions to improve water quality and would discourage active public participation. Another Workgroup member suggested that States would edit their 303(d) lists even more carefully than they do now if 303(d) designation was a permanent status. Several individuals suggested that managing such a list may require substantial State resources and would distract State agency personnel from TMDL development activities. Other members disagreed with this suggestion *based on their opinion that the lists can be easily managed in a spreadsheet.*

Several members remarked that there is no reason to assume that sources would stop implementing measures prescribed by the TMDL if a water were removed from the 303(d) list because a water can always be placed back on the 303(d) list. One Workgroup member noted that, while this may be true, it is still preferable to prevent an impairment than to correct one (from both an environmental and economic perspective) and that permanent listing has a stronger preventive orientation than other

approaches.

Several Workgroup members noted that the "segmented list" approach described in other Workgroup discussions could help assure appropriate tracking and perhaps ease State workloads. One member noted that there may be a need for a "maintenance" category to cover waters that have come into attainment but for which additional measures (e.g., ongoing review and planning or intensive monitoring) are still necessary.

One Workgroup member noted that the statute does not specifically allow for EPA's current broad "expected to meet" exemption and suggested that expected to meet waters should be listed on 303(d). Others suggested that expected to meet waters (and, perhaps, other kinds of waters) should be tracked elsewhere.

3. The 303(d)(1) list is a list of waters that require TMDLs. Other waters that are "water quality limited" and for which existing controls are expected to lead to attainment of standards and/or TMDL implementation are described as "expected-to-meet waters." These waters would be tracked elsewhere.
 - a. (Waters which meet WQS following implementation of the TMDL should be tracked on a non-303(d)(1) "maintenance list" and may be subject to additional controls.)

OPTION DISCUSSION: One Workgroup member noted that the distinction between "listed" and "unlisted" waters may be confusing to the public and to regulated industry and that all interested parties, including interest groups and the agencies need to be able to see which waters are water quality limited to ensure the proper application of the state's antidegradation policy to new or expanded loads and permit requirements for permit renewals and certain other regulatory actions. This member expressed a concern that States may "lose sight" of impaired waters tracked elsewhere and that 303(d) alone may establish adequate tracking and water quality monitoring mechanisms.

Other Workgroup members noted that water quality limited waters are (or should be) tracked on other CWA lists (e.g., the 305(b) Assessment) and should already be monitored via the State's comprehensive monitoring work. [Where these other processes are or appear to be ineffective, the Workgroup may recommend that EPA and States scrutinize and improve them.]

- b. The 303(d)(1) list is a list of water quality limited waters that are amenable to TMDLs.

OPTION DISCUSSION: One Workgroup member pointed out that impaired waters not amenable to existing and available TMDL action could still benefit from 303(d) listing if being listed helps highlight the problem and stimulate research to develop solutions. Being listed may also encourage States to more carefully monitor water quality on such waters for further signs of degradation. Other members suggested that listing such waters may instead make States and EPA vulnerable to lawsuits

if the State has committed to complete all TMDLs in a given period of time and has failed to make progress for some subset of its 303(d)-listed waters.

III. LIST PRIORITIZATION/TARGETING

(A) PRIORITIZATION CRITERIA:

Should EPA establish factors that States must consider to develop their priority rankings? Or, should such factors be determined individually by States?

DISCUSSION: The Clean Water Act states that the priority ranking for listed waters must take into account the severity of the pollution and the uses to be made of such waters. The priority ranking is also to include a list of waters targeted for TMDL development over the next two years (until the next listing cycle). For example, States commonly categorize Section 303(d) listed waters as "high," "medium", or "low" priority, although not all high priority waters are necessarily targeted for development during the next listing cycle.

In guidance, EPA has identified additional factors (beyond those laid out in the statute) that States/Tribes should also consider when targeting high priority waters for TMDL development. These factors should reflect an evaluation of the relative value and benefit of waterbodies within the State and take into consideration several general factors including the following:

- Risk to human health and aquatic life.
- Degree of public interest and support.
- Recreational, economic, and aesthetic importance of a particular waterbody.
- Vulnerability or fragility of a particular waterbody as an aquatic habitat.
- Immediate programmatic needs such as wasteload allocations needed for permits that are due for revisions or new or expanding discharges, or load allocations for needed BMPs.
- Waters and pollution problems identified during the development of the Section 304(l) "long list." [meets its designated use criteria, but does not meet fishable/swimmable criteria]
- Court orders and decisions relating to water quality.
- Availability of controls.

At the outset of their discussion, the Workgroup noted that priority ranking varies from State-to-State. Several members noted that it may be difficult to weigh "severity of pollution" and "uses to be made" of a waterbody. One Workgroup member suggested that the "High-Medium-Low" ranking process is insufficient and inconsistent with the statute, especially if not consistently applied across States. *This Workgroup member also believes that national consistency is necessary to carry out the environmental objectives of the Clean Water Act and Endangered Species Act.* Several other members followed up this point by noting that while an improved degree of national consistency would be useful (e.g., in creating a level playing field for the private sector), State governments and constituencies should still have considerable latitude to set their own priorities. Accordingly, these members were reluctant to recommend that EPA develop specific, prescriptive guidance for 303(d) list priority ranking.

Finally, the Workgroup discussed how priority ranking fits in with the "Segmented List" approach discussed on other teleconferences. One member remarked that

aspects of the segmented list approach may be authorized, in part, by the statutory language pertaining to 303(d) list priority ranking. Therefore, in the interest of making this approach equitable, effective, and consistent, additional national guidance might be useful.

OPTIONS:

1. EPA should establish a concise set of factors in guidance that the States should consider when developing their priority rankings. (e.g., exceedance of water quality standards as validated by minimum data quality/quantity requirements and other factors such as those identified in the Section 305(b) Water Body System User's Guide)

OPTION DISCUSSION: States would not be required to apply these factors in a specific, prescriptive fashion. See Options 4-6, below, for possible weighting considerations.

2. States should continue to make priority determinations based on available EPA guidance.

OPTION DISCUSSION: States are in the best position to determine "severity of pollution and uses to be made of such waters" and should thus be able to prioritize the waters on the TMDL list accordingly using current EPA guidance or as determined individually.

3. States should use a two-step process for setting priorities. The first step is to divide all waters into four tiers based on uses to be made of waters. In the second step, waters are ranked based on the severity of pollution within each tier. The four tiers follow:

- a. Tier One: water quality impairment causes critical impacts to highly sensitive beneficial uses and cannot be treated (i.e., drinking water treatment) or prevented.
 1. critical impacts=affect long-term health and viability of populations
 2. highly sensitive beneficial uses=threatened or endangered species protection and/or subsistence fishing.
- b. Tier Two: water quality impairment causes less critical impacts to sensitive beneficial uses and cannot be treated or prevented.
 1. less critical=shorter-term, less likely to have permanent adverse effect
 2. sensitive=native species, impacts to human health less likely to harm permanently
- c. Tier Three: water quality impairment that can be treated or prevented causes impacts to sensitive uses.
- d. Tier Four: poor water quality affects less sensitive (non-biological) uses.

Within each tier, waterbodies are ranked individually using the

following criteria:

- a. pollution loads (or other non-load impacts);
- b. risk from pollution loads (or non-load impacts) that affect uses; or
- c. declining water quality.

OPTION DISCUSSION: Using this approach, resources could be saved by not individually ranking each water in the lower tiers until such time as it is likely that TMDLs will be developed for them. *[Facilitator's note: The Workgroup did not discuss this option. It will be supplemented with other information after the Listing Group discusses Targeting issues.]*

4. If additional prioritization factors are to be developed, what should they be (e.g., the existence of a watershed plan, availability of necessary data, tools and resources for TMDL development and implementation, costs and benefits), and how should they be taken into account to assign priorities? Should they be weighted for priority setting?

DISCUSSION: The statute indicates that the priority ranking for listed waters must take into account only "the severity of the pollution and the uses to be made of such waters."

OPTIONS (FOR SETTING PRIORITIZATION FACTORS):

1. EPA should develop a set of comprehensive population exposure-based risk factors for human health and aquatic life to be used by States/Tribes to establish the lists of priority waters. (e.g., human health and aquatic life criteria.)
2. States should use Section 305(b) "causes and sources" lists (Appendix G-1991 Guidance) to identify priority waters. (See this list attached at end of fax.)
3. States/Tribes should consider all [or some-how many and which ones] of the following factors in assigning 303(d) list priorities:
 - State's ability to solve known impairments with existing tools;
 - data availability and quality;
 - likelihood of new/other data showing compliance with WQS;
 - resource constraints (relative costs of developing TMDL for specific waterbodies);
 - probability of achieving water quality standards near term;
 - existence of an active watershed protection program.

OPTION DISCUSSION: *After the Workgroup discussion, one Workgroup*

member suggested the following criteria also be considered: (1) multiple stressors; (2) major retrofits at NPDES sources; (3) FERC relicensing; and (4) degree of impairment under consideration.

Weighting of Factors

4. States/Tribes should identify stream segments as high priority based on the following factors, as indicated by current data or information:
 - Multiple (5 or greater) exceedances of water quality criteria;
 - Near term significant risk to human health and/or aquatic life;
 - Near term significant risk to aquatic habitat [particularly spawning areas];
 - Solution to identified impairments is reasonably achievable (source identification, control methods);
 - Court imposed restrictions;
 - Others???
5. States/Tribes should identify stream segments as medium priority based on the following factors, as indicated by current data or information:
 - Several(3-5) exceedances of water quality criteria;
 - Potential risk to human health and/or aquatic life;
 - Potential risk to aquatic habitat [particularly spawning areas];
 - Additional data needed to further define exceedances;
 - Likelihood of new data showing compliance with WQS;
 - Existence of an active Watershed Protection Plan;
 - Others???
6. States/Tribes should identify stream segments as low priority based on the following factors:
 - Single exceedance of water quality criteria;
 - Additional data needed to further define exceedances;
 - Likelihood of new data showing compliance with WQS;
 - Minimal risk to human health and/or aquatic life;
 - Minimal risk to aquatic habitat [particularly spawning areas];
 - Existence of an active Watershed Protection Plan;
 - Others??

IV. IMPLICATIONS OF BEING LISTED

(A) What should be the implications of being listed?

DISCUSSION: It is difficult to improve water quality in a truly effective manner until the TMDL is completed and fully implemented. However, given that the time frame from listing to completion and implementation of load allocation for a given waterbody in the TMDL process can be 5-8 years (or more), States often must make important decisions affecting both water quality and other social goals, including promoting economic and community development. The goals of the Clean Water Act cannot be achieved if such decisions are made without considering existing water quality impairments and how water quality improvements are likely to be achieved under the future TMDL.

(1)(a): If water is placed on the 303(d) list, but a TMDL has not yet been completed/approved, should there be limitations on development, industry expansions, timber harvesting, or other activities?

DISCUSSION: [NOTE: The Workgroup's discussions of this issue have been preliminary in

nature. This section is included for the information of Committee members but should not be viewed as a complete exposition of the views of the workgroup or the options for this issue.]

The water quality standards regulations, at 40 CFR 131.12 (a)(1), provide: "Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." *[PLACEHOLDER: The Workgroup intends to add a discussion of antidegradation policies' relationship to this issue. The discussion likely will include anti-degradation policy's possible application to NPS activities, 401 certifications, and other activities not covered by NPDES permit requirements.]*

According to Section 122.4(I) of the NPDES regulations, "No permit may be issued to a new source or a new discharger if the discharge from its construction or operation will cause or contribute to the violation of water quality standards." This approach of prohibiting new (or increased) discharges that will exacerbate problems in impaired waters could help protect water quality against further degradation until the TMDL is completed. However, some members of the Listing Workgroup noted that such an approach may not be equitable, reasonable, practical, or desirable, especially where TMDL completion will take several years. Pressures of population growth and economic development may be difficult to withstand. For example, industry might move elsewhere, where restrictions are fewer or the uncertainty about an upcoming TMDL does not exist. Other members suggested that such an approach will encourage private parties to offer up resources to speed the TMDL development process.

Concerns noted by some Workgroup members were: the policy's possibly inequitable penalty on new sources (when existing sources are causing the impairment); the unfairness of limiting local or industrial expansion due to State programs' failure to complete TMDLs; and the inconsistency of the policy with State, local, or federal initiatives (such as "brownfields redevelopment" and "smart growth") that attempt to target development where an infrastructure already exists and thereby prevent urban sprawl and protect pristine areas from development and possible degradation.

There was also some concern among Workgroup members about permit challenges that could result from any of the options discussed below. Citizens could challenge permits that do not assure attainment of water quality standards (i.e., permits that are not based on a completed TMDL) and permit applicants could challenge effluent limits and permit denials arguing for their fair share of assimilative capacity.

On the other hand, without restrictions on increased discharges, existing impairments will likely become more severe and more difficult (perhaps even impossible) to reverse. The restrictions will also provide a powerful incentive to States to move forward with TMDL development and to State legislatures to fund State TMDL programs adequately for this purpose. To date, State TMDL development has proceeded at a very slow rate.

The options addressing the implications of being listed are presented in three scenarios:

OPTIONS: (Note that in each option, only the water quality-limited parameters would be affected by restrictions on new or increased discharges.)

1. **MAINTAIN THE STATUS QUO** - EPA should establish a policy that requires the existing load to serve as the cap until the TMDL is set. New and existing flows (point and nonpoint) could be increased as long as the load is within the cap. In effect, no existing discharger could increase its load and no new discharge could commence without demonstrated offsets that would reduce existing loads by the same amount as the increase.

OPTION DISCUSSION: The consequences of this option would be:

- A. Water quality impairment would not worsen during the TMDL development phase.
- B. Permits for existing sources of the impairing substance would be granted for current load with a re-opener clause to revise the permit once the TMDL is calculated. Permits for discharging non-limited substances would not be affected. One Workgroup member noted that this aspect of Option 1 may be especially troubling to municipal and other dischargers which rely on obtaining additional capacity during permit reissuance. However, another noted that they could help provide resources to support TMDL development.

One Workgroup questioned how a cap could be known/determined if NPS contributions to loading were not quantified.

One Workgroup member noted that Oregon has adopted in regulations, as part of its antidegradation policy, a "non-degradation" policy whereby new or expanded loads to an impaired water are prohibited. At this time, the non-degradation policy is applied through NPDES individual and general permits.

2. INCREASING THE CURRENT LOAD - EPA policy could be developed to allow the existing load to be increased. New and existing loads (point and nonpoint) would be allowed to be increased. The consequences of this option would be:

- A. Water quality impairment would continue and possibly become worse.
- B. Permits for the impairing substance would be granted for increased load. Permits for other substances would be granted. Permits would have an opener clause to revise the permit once the TMDL is calculated. Many municipal sources rely on obtaining additional capacity during permit reissuance.
- C. May be difficult or even impossible to retrofit the loads to meet TMDL requirement, possibly making the impairment impossible to reverse.

3. DECREASING THE CURRENT LOAD - A new EPA policy could require that the current load be reduced. New and existing loads (point and nonpoint) would be required to be reduced (possibly by requiring point sources to meet more stringent permit effluent limits and NPS to implement more BMPs).

OPTION DISCUSSION: The consequences of this option would be:

- A. Water quality impairment, although lessened, might continue, or it could be eliminated. (The correct load reduction cannot be determined until the TMDL is computed.)
- B. Permits for the impairing substance might be granted for new and existing permits, but would require a reduction. New sources might need to seek offsets -- and then some -- from existing sources. At least one member felt that under this option no new sources should be allowed because trading or offsets could not be managed without an in-place TMDL. Permits would have an opener clause to revise the permit once the TMDL is calculated. Permits for other substances would be granted.
- C. Permittees may over-control, or under-control, or invest in the wrong control technology prior to having a completed TMDL, and be required to spend more later to meet the TMDL requirements.

4. NO NEW LOADS - EPA would prohibit new or increased loads unless consistent

with an approved TMDL.

OPTION DISCUSSION: Some Workgroup members felt that only with a TMDL in place could water quality managers make decisions about allowing increases in existing discharges and commencement of new dischargers and be consistent with NPDES regulations and the antidegradation policy for water quality-limited waters. Several issues need to be considered in the TMDL context that will affect these decisions. For example, a State may decide not to allocate the entire assimilative capacity of the stream but rather to provide for enhanced water quality (better than WQS) for the stream. As another example, the State may establish a reserve for growth that will itself need to be allocated in a deliberate way, with public participation and a focus on the local communities affected and application of the antidegradation policy for high quality waters to that reserve.

5. Possibly in conjunction with any of the options above: **NEW SOURCE REVIEW/OFFSET** - EPA could develop new regulations or policies to authorize sources to obtain offsets from other sources in order to increase their loading to 303(d)-listed waters.

OPTION DISCUSSION: This "offset" approach is used under the Clean Air Act but may not be practicable in heavily impacted waterbodies. One difficulty is that airsheds tend to be larger and have more diverse sources than most impaired water segments. Therefore, the availability of obtaining offsets may be obstacles to this option. On the other hand, the option would provide some flexibility for communities interested in locating new commercial or industrial facilities on a 303(d)-listed water. One member expressed concern that allowing offsets would not be consistent with current NPDES regulations or antidegradation policies and that new sources should not be allowed without a TMDL, since trading (offsets) should be managed through a TMDL.

(2) **COMPLIANCE SHIELD FOR PERMITS IN LISTED WATERS:** When a water is listed, but a TMDL not yet approved, how can permit review and renewal be undertaken in a way that provides the permittee with an adequate compliance shield, given the requirement that permits provide for attainment of water quality standards?

DISCUSSION: Workgroup members pointed out that EPA and the States want to protect point sources from expensive control technology retrofits that may be inadequate or unnecessary under future TMDLs. *[PLACEHOLDER: Topic not yet discussed.]*

V. DE-LISTING and/or RE-LISTING

(A) REMOVING WATERS FROM THE LIST:

1. Once a waterbody is listed, how and when may it be removed from the section 303(d) list?
2. Under what circumstances should it be re-listed?
3. What factors should be considered in making this determination? For example, should a water be removed from a section 303(d) list if a Use Attainability Analysis suggests that an applicable water quality standard is unattainable?
4. Finally, when waters are removed, what should the process be?

DISCUSSION: The 303(d) list submittal process currently requires states to submit a revised list of impaired waterbodies to EPA on even years. Waterbody listing determinations are made by each state with oversight by EPA. If a state chooses not to list a waterbody, EPA may request the state to "demonstrate good cause for not including a water or waters on the list" 40 CFR 130.7(6)(iv).

The statute does not directly address the issue of removing waters from, or relisting waters on, the 303(d) list. One member suggested that the statute specifically does not allow delisting.

According to EPA's guidance for 1994 303(d) lists, States may remove waters from the list when: (1) new information shows that "the original basis for listing is determined to be inaccurate;" or (2) EPA has approved a TMDL designed to achieve water quality standards. In this guidance, EPA Regional Offices were given the authority to determine whether a State or Tribe should continue to list waterbodies with approved TMDLs. Circumstances warranting relisting are not specifically addressed in either statute, regulations, or guidance.

Workgroup members pointed out that there are policy reasons both to preclude from relisting a water with an approved TMDL and also others to keep it on the 303(d) list. Delisting a water with an approved TMDL rewards States for moving forward with TMDL development and allows them to demonstrate progress in TMDL development. Doing so may also remove certain penalties or discharge limits. Other Workgroup members suggested that this action may instead reward "partial success" and noted that there are also policy reasons to relist waters that, after some period of time, fail to attain water quality standards. *One Workgroup member further suggested that maintaining a more comprehensive 303(d) list may allow States and the public to better monitor implementation and to track progress toward water quality goals and helps States apply the antidegradation policy correctly.*

These discussion options discuss processes that may be used to preclude previously listed waterbodies from relisting either because they have achieved some degree of resolution based on the TMDL process. Second, they may have originally been listed in error (e.g., a technology-based remedy exists, or new information is available to show the water is not impaired). In general, regardless of the option, the Workgroup recognized that mechanisms are needed to track items that are removed from the 303(d) list. *[Note from the Facilitator: As of the May 2 discussion, the Workgroup had not discussed what criteria might be used to determine if a water could be removed from, or placed back on, a 303(d) list.]*

1. (Current Practice) States may preclude a previously listed waterbody from the 303(d) list based on "good cause". Waterbodies without EPA-approved TMDLs, could be included or precluded at the discretion of the state, and reflected by each list submission.
2. (Current Practice, with Public Notification) Expands OPTION 1 to require public notification of waterbodies that have been removed from the revised 303(d) list. This would include removal of waterbodies that have approved TMDLs, or waterbodies that, upon additional analysis, should not have been listed originally.

OPTION DISCUSSION: Workgroup members noted that States would be held to a higher level of accountability (than with Option 1). Workgroup members also expressed some reservations with this option because it relies on public pressure and persuasion and lacks an enforceable

mechanism. Members were also concerned that because States would be allowed to define "good cause," national consistency may be compromised.

3. (National Guidance for Removal and Public Notification) EPA regulations and guidance will continue to recognize a state's authority to preclude a waterbody from the 303(d) list based on current "good cause" listing procedures. EPA would develop guidance to standardize the decision criteria for removal and public notice process.

OPTION DISCUSSION: Workgroup members remarked that this option has some additional appeal because the national guidance would standardize decisionmaking and thereby "level the playing field." Other Workgroup members noted that because the criteria are only laid out in guidance, this option also lacks enforceable mechanisms.

4. (National Requirements Applied by States) States would apply mandatory national criteria for removing waterbodies, and submit revised 303(d) lists to EPA for review. Revised regulations could also require public notification of precluded waterbodies.

OPTION DISCUSSION: Workgroup members noted that this option might slow down the process for "delisting."

5. (National Requirements Applied by EPA) EPA would apply standards and, EPA would remove waterbodies from State 303(d) lists. Until this formal de-listing has occurred, States could not remove items from their 303(d) lists as they currently do when submitting revised 303(d) lists. This formal process could include various degrees of standardized de-listing criteria, and public notice procedures.

OPTION DISCUSSION: Workgroup members noted that this option would increase EPA's responsibilities and would likely slow down the process for "delisting."

6. Waters are never removed from the 303(d) list unless the original basis for listing is deemed inaccurate.
7. Waters should be relisted under the following circumstances:
 - a. TMDL found to be inadequate;
 - b. TMDL not being implemented;
 - c. TMDLs for which next phase is overdue; and
 - d. follow-up monitoring not taking place.

[Note from facilitator: This option has not yet been discussed by the Workgroup. It was suggested by a Workgroup member following the last teleconference and raised concerns of other Workgroup members during the paper review. It will be revisited later this summer.]

Total Maximum Daily Load (TMDL) Program

Listing Process Proposal Option 1:

The 303(d)(1)(A) list is a comprehensive catalog of all [threatened and] impaired waters.

Defining the 303(d)(1)(A)) List

- (1) The 303(d)(1)(A)) list is a comprehensive list of waters that fail to meet water quality standards or that meet WQS only because a TMDL is in place. States use the list to develop management strategies and to track all impaired and threatened waters.
- (2) The list is redeveloped on a regular basis and updated whenever significant interim changes are made.
- (3) Threatened waters are defined as... *NOTE: The Listing Workgroup proposes that threatened waters be defined carefully and strictly and include only a relatively small number of waters.*

Comprehensiveness

- (1) The 303(d) list identifies all impaired and threatened waters and all TMDL-covered waters. The list is segmented (see below) to establish different management approaches with different regulatory implications for various categories of waters.
- (2) TMDL practicality, cost, or enforceability are not considerations in deciding to list a water.

Not Listing

No [threatened or] impaired waters can be exempted from listing. The list contains waters that are "expected to meet" WQS, those waters in the process of implementing TMDLs, and those that have attained WQS following TMDL action.

Connection to Other Lists

- (1) Other CWA lists/reports based on data and information of sufficient quality should be used as source materials for 303(d).
- (2) Other CWA lists/reports based on data and information of questionable quality can be used

to target waterbodies for assessment/monitoring and possible inclusion on the 303(d) list at a later date.

(3) Professional opinion/judgment used to justify/prioritize awarding federal grant monies (e.g., 319 monies) to achieve water quality goals on a specific impaired [or threatened] water should be sufficient to warrant 303(d) listing.

Segmenting

The 303(d) list is organized into segments based on types of waters and their water status. (See below for an example of how some of the segments may be broken down.) Segments may recommend appropriate timing for undertaking a TMDL based on factors described in "Scheduling," below.

Scheduling

Priorities for TMDL development are based on: (1) risk to human health and aquatic life; (2) vulnerability or fragility of a particular waterbody as aquatic habitat; (3) court-imposed restrictions; (4) cost or availability of controls; (5) availability of data and scientific tools to perform a defensible TMDL; (6) need for NPDES renewals; (7) degree to which stakeholder involvement is needed to develop an implementable TMDL and the time required to allow for such involvement.

Implications of Being Listed

(1) Limitations on point/nonpoint source activities vary with waterbody status. **For example:**

Seg #	Waterbody Status	State/EPA Obligations	Source Requirements
1	WB listed - TMDL not yet completed	<ul style="list-style-type: none"> • collect addl data as necessary • establish schedule for completing TMDLs • establish priority ranking, if not yet done • develop TMDL, in priority order 	<ul style="list-style-type: none"> • no additional loadings (existing and new sources) • reopener clauses in reissued permits
2	TMDL approved, in process of being implemented	<ul style="list-style-type: none"> • revise permits and other control mechanisms for existing sources, pursuant to TMDL • continue to monitor WQ • monitor TMDL implementation 	<ul style="list-style-type: none"> • no additional loading, except in accord with TMDL (TMDL may have allocn for future growth) • NPDES permits reopened as necessary

3A	TMDL implemented, water quality standards not yet attained (Phase I)	<ul style="list-style-type: none"> review permits <i>and</i> other control mechanisms (existing and new applications) monitor WQ progress monitor TMDL implementation if needed, amend TMDL to meet WQ goals 	<ul style="list-style-type: none"> no additional loading, except in accord with TMDL (TMDL may have allocn for future growth) reopener clauses in reissued permits
3B	TMDL implemented, water quality standards not yet attained (Phase II)	<ul style="list-style-type: none"> review permits and other control mechanisms (existing and new applicns) based on amended TMDL monitor WQ progress monitor TMDL implementation if needed, amend TMDL to meet WQ goals 	<ul style="list-style-type: none"> no additional loading, except in accord with TMDL (TMDL may have allocn for future growth) reopener clauses in reissued permits
4	WB "expected to meet"	<ul style="list-style-type: none"> rigorously monitor for WQ progress; if progress not made in specified time frame, list under segment 1 or 5, as appropriate 	<ul style="list-style-type: none"> no limits on loadings except as required under existing permits or watershed plans
5	<ul style="list-style-type: none"> WQL water legacy problem natural conditions remote source (where TMDL development or implementation is not feasible) 	<ul style="list-style-type: none"> collect data monitor conduct additional research monies, <i>as appropriate</i> institute UAA or site-specific analysis, <i>as appropriate</i> develop TMDL on extended schedule (as info and tools become available) 	<ul style="list-style-type: none"> no additional loadings by controllable sources reduce contributions by controllable sources, where possible
6	WQL water affected only by NPS	<ul style="list-style-type: none"> develop TMDL (possibly on extended schedule <i>if stakeholder process or other factors require</i>) using avail. State and federal authority and incentive programs 	<ul style="list-style-type: none"> no additional loadings by controllable sources reduce contributions by controllable sources, through available means
7	<ul style="list-style-type: none"> TMDL completed, water in attainment with WQS 	<ul style="list-style-type: none"> NPDES permit limits set in concert with TMDL restrictions monitor carefully for 5 yrs. to check for "backsliding" no further action needed 	<ul style="list-style-type: none"> additional loading allowable, if consistent with TMDL and antidegradation policy

Waterbodies move between different segments of the 303(d) list when status changes. A water is removed from the 303(d) list only when the basis for the original listing decision is deemed inaccurate. In all other cases, 303(d) listing is a permanent status. The TMDL continues to govern a waterbody after water quality standards are attained.

Listing Process Proposal Option 2:

The 303(d)(1)(A) list is a comprehensive catalog of all impaired waters.

Defining the 303(d)(1)(A) List

- (1) The 303(d)(1)(A) list is a comprehensive list of waters that fail to meet water quality standards. States use the list to develop management strategies and to track all impaired waters.
- (2) The list is redeveloped on a regular basis and updated when significant interim changes are made.

Comprehensiveness

- (1) The 303(d)(1)(A) list identifies all impaired waters. The list is segmented (see below) to establish different management approaches with different regulatory implications for various categories of waters.
- (2) TMDL practicality, cost, or enforceability are not considerations in deciding to list a water.

Not Listing

No impaired waters can be exempted from listing for any reason. "Expected to meet" waters and those in the process of implementing TMDLs are listed.

Connection to Other Lists

- (1) Other CWA lists/reports based on data and information of sufficient quality should be used as source materials for 303(d)(1)(A).
- (2) Other CWA lists/reports based on data and information of questionable quality can be used to target waterbodies for assessment/monitoring and possible inclusion on the 303(d)(1)(A) list at a later date.
- (3) Professional opinion/judgment used to justify/prioritize awarding federal grant monies (e.g., 319 monies) to achieve water quality goals on a specific impaired water should be sufficient to warrant 303(d)(1)(A) listing.
- (4) Threatened waters and waters that attain standards based on the TMDL should be tracked elsewhere.

Segmenting

The 303(d)(1)(A) list is organized into segments based on types of waters and their water status. (See below for an example of how some of the segments may be broken down.) Segments may recommend appropriate timing for undertaking a TMDL based on factors described in "Scheduling," below. **[SAME AS OPTION 1, ABOVE]**

Scheduling

Priorities for TMDL development are based on: (1) risk to human health and aquatic life; (2) vulnerability or fragility of a particular waterbody as aquatic habitat; (3) court-imposed restrictions; (4) cost or availability of controls; (5) availability of data and scientific tools to perform a defensible TMDL; (6) need for NPDES permits; (7) degree to which stakeholder involvement is needed to develop an implementable TMDL and the time required to allow for such involvement. **[SAME AS OPTION 1, ABOVE]**

Implications of Being Listed

(1) Limitations on point/nonpoint source activities vary with waterbody status. **For example:**

Seg #	Waterbody Status	State/EPA Obligations	Source Requirements
1	WB listed - TMDL not yet completed	<ul style="list-style-type: none">• collect addl data as necessary• establish schedule for completing TMDLs• establish priority ranking, if not yet done• develop TMDL, in priority order	<ul style="list-style-type: none">• no additional loadings (existing and new sources)• reopener clauses in reissued permits
2	TMDL approved, in process of being implemented	<ul style="list-style-type: none">• revise permits and other control mechanisms for existing sources, pursuant to TMDL• continue to monitor WQ• monitor TMDL implementation	<ul style="list-style-type: none">• no additional loading, except in accord with TMDL (TMDL may have allocn for future growth)• NPDES permits reopened as necessary
3A	TMDL implemented, water quality standards not yet attained (Phase I)	<ul style="list-style-type: none">• review permits and other control mechanisms (existing and new applications)• monitor WQ progress• monitor TMDL implementation• if needed, amend TMDL to meet WQ goals	<ul style="list-style-type: none">• no additional loadings (existing and new sources) except in accord with TMDL (TMDL may have allocn for future growth)reopener clauses in reissued permits

3B	TMDL implemented, water quality standards not yet attained (Phase II)	<ul style="list-style-type: none"> review permits and other control mechanisms (existing and new applications) based on amended TMDL monitor for WQ progress monitor TMDL implementation if needed, amend TMDL to meet WQ goals 	<ul style="list-style-type: none"> no additional loadings (existing and new sources) except in accord with TMDL (TMDL may have allocn for future growth) reopener clauses in reissued permits
4	WB "expected to meet"	<ul style="list-style-type: none"> rigorously monitor for WQ progress; if progress not made in specified time frame, list under segment 1 or 5, as appropriate 	<ul style="list-style-type: none"> no limits on loadings except as required under existing permits or watershed plans
5	WQL water <ul style="list-style-type: none"> legacy problem natural conditions remote source (where TMDL development or implementation is not feasible) 	<ul style="list-style-type: none"> collect data monitor conduct additional research monies, <i>as appropriate</i> institute UAA or site-specific analysis, <i>as appropriate</i> develop TMDL on extended schedule (as info and tools become available) 	<ul style="list-style-type: none"> no additional loadings by controllable sources reduce contributions by controllable sources, where possible
6	WQL water affected only by NPS	<ul style="list-style-type: none"> develop TMDL (possibly on extended schedule <i>if stakeholder process or other factors require</i>) using avail. State and federal authority and incentive programs 	<ul style="list-style-type: none"> no additional loadings by controllable sources reduce contributions by controllable sources, through available means

Managing the List/Removing Waters from the List/Relisting Waters

Waterbodies move between different segments of the 303(d) list when status changes. A water is removed from the 303(d) list when water quality standards are achieved or the basis for the original listing decision is deemed inaccurate. The TMDL continues to govern a waterbody after water quality standards are attained.

Listing Process Proposal Option 3:

The 303(d)(1)(A) list is a catalog of waters impaired exclusively by point sources or a combination of point and nonpoint sources. Waters impaired exclusively by nonpoint and/or natural sources are listed under 303(d)(3).

Defining the 303(d)(1)(A) and 303(d)(3) Lists

(1) The 303(d)(1)(A) list is a list of waters having both point and nonpoint sources that fail to meet water quality standards. States use the list to develop management strategies and to track all impaired waters.

(2) The 303(d)(3) list is a list of waters having only nonpoint or natural sources that fail to meet water quality standards. States use the TMDLs developed for these waters to target activities and resources of the State NPS management program established pursuant to Section 319 of the Clean Water Act.

(3) Each list is redeveloped on a regular basis and updated when significant interim changes are made.

Comprehensiveness

(1) The 303(d) lists identify all impaired waters.

The 303(d)(1)(A) includes waters with a combination of point and nonpoint sources. The list is segmented (see below) to establish different management approaches for various categories of waters. Nonpoint source-only waters and waters affected only by natural sources are included on the 303(d)(3) list. This list contains two segments. (2) TMDL practicality, cost, or enforceability are not considerations in deciding to list a water.

Not Listing

No impaired waters may be exempted from 303(d) listing. "Expected to meet" waters are listed.

Connection to Other Lists

(1) Other CWA lists/reports based on data or information of sufficient quality should be used as source materials for 303(d)(1)(A) and 303(d)(3).

(2) Other CWA lists/reports based on data or information of questionable quality can be used to target waterbodies for assessment/monitoring and possible inclusion on the 303(d)(1)(A) or 303(d)(3) lists at a later date.

(3) Threatened waters and waters that attain standards based on the TMDL should be tracked elsewhere.

Segmenting

The 303(d)(1)(A) list is organized into segments based on types of waters and their water status. (See below for an example of how some of the segments may be broken down.) Segments may recommend appropriate timing for undertaking a TMDL based on factors described in "Scheduling," below. The 303(d)(3) list contains two segments based on types of waters.

Scheduling

Priorities for TMDL development are based on: (1) risk to human health and aquatic life; (2) vulnerability or fragility of a particular waterbody as aquatic habitat; (3) court-imposed

restrictions; (4) cost or availability of controls; (5) availability of data and scientific tools to perform a defensible TMDL; (6) need for NPDES renewals; (7) degree to which stakeholder involvement is needed to develop an implementable TMDL and the time required to allow for such involvement.

Implications of Being Listed

(1) Limitations on point/nonpoint source activities vary with waterbody status. **For example:**

303(d)(1)(A) List

Seg #	Waterbody Status	State/EPA Obligations	Source Requirements
1	WB listed - TMDL not yet completed	<ul style="list-style-type: none"> • collect addl data as necessary • establish schedule for completing TMDLs • establish priority ranking, if not yet done • develop TMDL, in priority order 	<ul style="list-style-type: none"> • no additional loadings (existing and new sources) • reopener clauses in reissued permits
2	TMDL approved, in process of being implemented	<ul style="list-style-type: none"> • revise permits <i>and</i> other control mechanisms for existing sources, pursuant to TMDL • continue to monitor WQ • monitor TMDL implementation 	<ul style="list-style-type: none"> • no additional loading, except in accord with TMDL (TMDL may have allocn for future growth) • NPDES permits reopened as necessary
3A	TMDL implemented, water quality standards not yet attained (Phase I)	<ul style="list-style-type: none"> • review permits <i>and</i> other control mechanisms (existing and new applications) • monitor WQ progress • monitor TMDL implementation • if needed, amend TMDL to meet WQ goals 	<ul style="list-style-type: none"> • no additional loadings (existing and new sources) except in accord with TMDL (TMDL may have allocn for future growth) • reopener clauses in reissued permits
3B	TMDL implemented, water quality standards not yet attained (Phase II)	<ul style="list-style-type: none"> • review permits <i>and</i> other control mechanisms (existing and new applications) based on amended TMDL • monitor for WQ progress • monitor TMDL implementation • if needed, amend TMDL to meet WQ goals 	<ul style="list-style-type: none"> • no additional loadings (existing and new sources) except in accord with TMDL (TMDL may have allocn for future growth) • reopener clauses in reissued permits

4	WB "expected to meet"	<ul style="list-style-type: none"> rigorously monitor for WQ progress; if progress not made in specified time frame, list under segment 1 or 5, as appropriate 	<ul style="list-style-type: none"> no limits on loadings except as required under existing permits or watershed plans
5	WQL water <ul style="list-style-type: none"> legacy problem natural conditions remote source (where TMDL development or implementation is not feasible) 	<ul style="list-style-type: none"> collect data monitor conduct additional research monies, <i>as appropriate</i> institute UAA or site-specific analysis, <i>as appropriate</i> develop TMDL on extended schedule (as info and tools become available) 	<ul style="list-style-type: none"> no additional loadings by controllable sources reduce contributions by controllable sources, where possible

303(d)(3) List

Seg #	Waterbody Status	State/EPA Obligations	Source Requirements
1	All WQL affected only by nonpoint and natural sources	<ul style="list-style-type: none"> collect data monitor institute UAA or site-specific analysis develop TMDL through stakeholder process using avail. State and federal authority and incentive programs use TMDL to target 319 and State efforts 	<ul style="list-style-type: none"> States prevent additional loadings by controllable sources using avail. authorities reduce contributions by controllable sources, through available means
2	All waters affected only by natural sources	<ul style="list-style-type: none"> collect data monitor institute UAA or site-specific analysis 	<ul style="list-style-type: none"> invoke State WQS natural conditions clause, where avail. develop TMDL, where approp. not applicable

Managing the List/Removing Waters from the List/Relisting Waters

(1) Waterbodies move between different segments of the 303(d)(1)(A) list when status changes. A water is removed from the 303(d)(1)(A) list when water quality standards are achieved or the basis for the original listing decision is deemed inaccurate. The TMDL continues to govern a waterbody after water quality standards are attained.

(2) Waters move between different segments of the 303(d)(3) list when status changes. A waters is removed from the 303(d)(3) list when water quality standards are achieved or the listing decision is deemed inappropriate. 319 and State activities (e.g., BMPs) conducted in response to the TMDL will remain in place after water quality standards are achieved.

303(d)(1)(A) List Features

- the Clean Water Act (Section 303(d)(2)) provides for specific approval of States' lists

- (and TMDLs) by EPA or in the event of disapproval, promulgation by EPA of its own lists (and loadings)
- for this option, implementation pathways available through 303(e), 319 grants, etc.
- for this option, 319 grants can be an important component of developing (and implementing) the NPS component of these TMDLs

303(d)(3) List Features

- the Clean Water Act does not explicitly require approval of a State's 303(d)(3) list *and TMDLs by EPA or, in the event of disapproval, promulgation by EPA of its own lists (and loadings)*
 - for this option, implementation pathways available through 303(e), 319 grants, etc.
 - for this option, 319 grants may be the primary means for developing and focusing management strategies on these waters in direct support of the State's NPS Management Program.
-

Listing Process Proposal Option 4:

The 303(d)(1)(A) list is a "TMDL To-Do List." Other CWA processes and lists should track and address impaired waters for which TMDL development and implementation are not feasible.

Defining the 303(d)(1)(A) List

The 303(d)(1)(A) list is a vehicle for tracking water quality limited impaired waters that require TMDLs.

Comprehensiveness

The 303(d)(1)(A) list identifies impaired waters for which TMDL development and implementation are feasible.

Not Listing

(1) Waters that are expected to meet WQS through established control programs do not need to be included on the 303(d)(1)(A) list.

(2) Waters for which TMDL development or implementation are infeasible (e.g., certain waters impaired by legacy pollutants, remote sources, or natural sources) may be excluded from listing.

Connection to Other Lists

The 303(d)(1)(A) list is a TMDL to-do list. Other CWA reports and lists (e.g., the 303(d)(3), the 303(e) process, the 305(b) report, the 319 list, or a new list developed to track waters not ripe for TMDL development) can be established/maintained to track other impaired waters. To the extent other lists meet 303(d) list data quality requirements, these should be used as source materials for 303(d)(1)(A) listing.

Segmenting

(1) States can organize the 303(d)(1)(A) list as they deem appropriate. Segments may be developed to reflect priority ranking.

(2) EPA should encourage States to track water quality limited waters that are not on the 303(d)(1)(A) list elsewhere (e.g., on a planning list), but tracking would be only at States' discretion.

Scheduling

Priority setting and targeting at State's discretion, based on the statutory criteria: (1) severity of pollution and (2) uses to be made of the water.

Implications of Being Listed

No increases in total allowable loading to the listed water until TMDL is established and then only when consistent with TMDL.

Managing the List/Removing Waters from the List/Relisting Waters

A water is removed from the 303(d) list when the TMDL is complete or the basis for the original listing decision is deemed inaccurate. Updates are made on a biennial basis when the list is reviewed/revised.

Listing Process Proposal Option 5:

CURRENT EPA NATIONAL POSITION ON THE 303(d) LISTING PROCESS

Defining the 303(d)(1)(A) List

The list identifies water quality limited segments **40 CFR 130.2(j) "Water Quality Limited Segment" are any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology based effluent limitations required by sections 301(b) and 306 of the Act.** still needing TMDLs, i.e., waters not meeting or not expected to meet water quality standards, even after the implementation of technology based controls. 40 CFR 130.7(b)

Comprehensiveness

Lists are generally considered to be comprehensive lists of water quality limited segments given "existing and readily available" data limitations. 40 CFR 130.7(b)

Connection to Other Lists

There are no direct relationships to other lists except that regulations require States to use all

"existing and readily available" data to determine which waters should be listed, including 305(b) reports and 319 assessments. 40 CFR 130.7 (b)(5)

Not Listing

Present regulations allow listing exceptions for those waters with more stringent effluent limitations required by State, local, or Federal authority or where other pollution controls, such as BMPs, that are required by State, local, or Federal authority will be implemented and are expected to attain standards. 40 CFR 130.7(b)(4)

Segmenting

States determine the scale of the waters to be reported on the list.

Scheduling

Regulations require lists to be prioritized for TMDL development taking into account the severity of pollution and uses of the waters. Also, lists must identify (or target) impaired waters for TMDL development over the next two years. 40 CFR 130.7 (b)(4)

Implications of Being Listed

State 303(d) lists are lists of waters requiring TMDLs. However, TMDLs may not be developed for all listed waters. In some cases, other activities may result in the attainment of water quality standards or additional monitoring or data evaluation may reveal that a particular waterbody is not water quality limited and therefore a TMDL is not necessary. 40 CFR 130.7 (c)

Managing the List/Removing Waters from the List/Relisting Waters

Waters can be removed from the list after a TMDL is approved or if data show that the water is no longer impaired or that an error occurred in the data or analysis applied to the original applicable listing. EPA allows flexibility on removing waters from the list, for example, some States keep listed waters on the 303(d) list until the segment meets standards.

Total Maximum Daily Load (TMDL) Program

MEMORANDUM

TO: Federal Advisory Committee on the TMDL Program

FROM: Members of the Management & Oversight Workgroup

DATE: May 23, 1997

RE: Management & Oversight Workgroup Discussion Materials and Small Group Questions

The Management & Oversight Workgroup has met six times since the Galveston. To date, our work has focused primarily on Issue Areas I (EPA Oversight Approaches and Processes), III (EPA/State Coordination with Other Agencies/Entities), and V (Public Notice/Participation). Our discussions are summarized in the attached discussion paper, **Summary of Management & Oversight Workgroup Discussions March-May** (May 23, 1997 draft).

Important discussions to date have included:

- basis for EPA review/oversight of State programs, how it might vary and by what factors (Issues I(B)-(D), I(F));
- using incentives/disincentives to strengthen State programs (Issue I(E));
- setting an appropriate pace for TMDL development (Issue I(G));
- federal agency coordination around TMDLs (Issue III(A); and
- encouraging meaningful public participation and stakeholder involvement at all stages of 303(d) list and TMDL development (Issues III(B) and V).

In Milwaukee, the Management & Oversight Workgroup will ask the full Committee to concur on several of its proposed approaches, described briefly below and laid out in greater detail in our discussion paper (attached).

At this time, the Workgroup is not asking the Committee to consider a few of the issues discussed in our discussion paper. We feel that some of these issues (e.g., setting an appropriate pace) are not quite ripe for Committee discussion while others do not seem to warrant full Committee discussion at this time.

Level of Review/Basis for Oversight (Issues I(B)-(D) and I(F))

Recommendation #1. EPA oversight of, and assistance to, State programs should be iterative and flexible, depending on the type of TMDL and other relevant circumstances.

POINT A: EPA should provide assistance to States early on and **throughout the 303(d) list development, TMDL development, and implementation(?) stages** to ensure that **State submissions and programs are approvable by EPA** and to avoid needless confusion that might result in disapprovals and federal promulgations. EPA's oversight and review of State programs should be an iterative process that is marked by **specific milestones** and progress checkpoints. Its main purpose should be to assure that State TMDLs meet federal requirements.

The Workgroup recommends that EPA develop, publish, and rely, in part, on a **TMDL checklist** that describes the recommended features of an approvable TMDL submission. The checklist would help to **(1) streamline the review process and (2) provide greater certainty to States, EPA, and the public regarding the features of an approvable TMDL**. The checklist may be organized into various sections to address different types of TMDLs.

POINT B: The degree of EPA oversight of/involvement in State TMDL development activities should vary according to several factors, including:

- the degree of controversy: EPA should provide more assistance (and at earlier stages) to States for more controversial or high profile TMDLs;
- whether the TMDL involves many jurisdictions: EPA should be more involved when a TMDL affects multiple jurisdictions (State, Tribes, federal land managers);
- the quality of State performance or extent of State program experience: States with extensive experience or outstanding past TMDL program performance should require less rigorous reviews by EPA.

Question for the Committee: *Do you agree with Points A and B? If so, which aspects of these points do you concur with most strongly? If not, with what aspects do you disagree? How would you modify the language to make it more agreeable?*

Incentives/Disincentives (Issue I(E))

Recommendation #2. EPA should use some combination of incentives and disincentives to help ensure State performance in the TMDL program.

A variety of incentives/disincentives could be used to enhance State performance. These include: (1) financial pressures (grant rewards or penalties); (2) increasing or decreasing EPA oversight, enforcement, or program implementation; (3) State program accountability to the public and its stakeholders through published EPA reports about program progress and results; and (4) prohibition on additional discharges until TMDLs are developed (and implemented).

Question for the Committee: *The Management & Oversight Workgroup seeks your guidance about the appropriateness of the incentives/disincentives discussed in the Options Paper and solicits other ideas about incentive/disincentive approaches.*

Public Participation (Issues V(A) and (B)).

Recommendation #3. EPA/States should engage the public at the earliest possible stage in 303(d) list and TMDL development.

- a. The public's involvement should not be limited to reviewing State 303(d) list and TMDL submittals to EPA but should include participation in all stages of list and TMDL preparation.
- b. EPA/States should maintain a notification list of all interested parties in a given watershed and distribute a schedule of public participation opportunities relating to list and TMDL development activities so that parties can prepare for meaningful participation.
- c. States should encourage (and support) local governments, landowners, regulated entities, or community leaders to take the lead in TMDL development by helping them learn about TMDL requirements and procedures and by providing a process for submitting TMDLs to the State for inclusion in its submittal to EPA.
- d. States should actively encourage high quality citizen monitoring and communicate how and when such information can be incorporated into TMDL program activities.

Meaningful and well-timed public participation and stakeholder involvement is the cornerstone of a successful TMDL process. While State and EPA efforts to expand public and stakeholder involvement may possibly result in delays in list and TMDL development, these efforts will help often lead to more expeditious TMDL implementation.

Question for the Committee: *Do you agree with the recommendations above? If so, which points are most important to you? With what points do you disagree? How would you modify or expand the recommendations to address what States/EPA can do to ensure meaningful public involvement in the list and TMDL development processes or how States/EPA can foster more meaningful stakeholder involvement?*

Federal Coordination and Responsibility (Issue III(A))

Recommendation #4. EPA should ensure that other federal agencies know which waters violate (or threaten to) water quality standards, which TMDLs are under development or implemented, and what opportunities exist to help develop and/or implement TMDLs. EPA should also help other federal agencies understand how to give full consideration to TMDL programs in their workplans or funding agreements with States.

Federal coordination around TMDL activities helps ensure that the goals of the Clean Water Act are consistently communicated and reinforces a federal commitment to the TMDL process. Federal agencies are important stakeholders in watersheds around the country. They can be regulated entities (e.g., under the NPDES program) and can also bear a responsibility to directly implement the Clean Water Act. Federal agencies may also have the authority to make decisions (e.g., permit grazing) or fund projects (e.g., highway construction projects) that

impact water quality. Agencies that oversee, implement, or fund activities that could impact water quality should consider 303(d) lists and TMDLs in their decisionmaking processes.

Question for the Committee: *Do you agree with this recommendation? If so, with what aspects of it do you concur most strongly? With what points do you not concur?*

The Management & Oversight Workgroup hopes to use full Committee input to build and focus its discussions. This memorandum is by no means an exhaustive survey of the topics covered by this Workgroup but rather highlights issues for which we feel full Committee input/guidance would be valuable and useful at this time.

Total Maximum Daily Load (TMDL) Program

SUMMARY OF MANAGEMENT & OVERSIGHT WORKGROUP DISCUSSIONS (March-May)

Note: italicized portions of the text were drafted by the facilitator for the Management & Oversight Workgroup's consideration. The Workgroup has not yet had an opportunity to review, discuss, and/or modify this language.

I. EPA OVERSIGHT APPROACHES AND PROCESSES

(A) STATE-EPA PLANNING: Should the TMDL program be addressed in State-EPA planning processes/agreements (e.g., PPAs, EPA work plans, state grants, 303(e) continuing planning processes)? If yes, which aspects should be included: listing; TMDL development; and/or TMDL implementation? How should they be addressed? How should TMDL program activities be integrated with other State water quality protection efforts?

ISSUE DISCUSSION: Currently, States and EPA regional offices exercise considerable discretion in determining whether and how to incorporate TMDL program activities into their planning processes/agreements. Section 303(d) of the Clean Water Act appears to provide for integrating listing and TMDL activities with other State water quality protection program activities. Section 303(d)(2) requires waters to be listed and TMDLs developed, but establishes no specific time frame or deadlines for performing these duties. States are to submit lists and TMDLs to the Administrator "from time to time," again implying an ongoing process. Following approval by the Administrator, "...such identification and load" shall be incorporated by a State "into its current plan under subsection [303](e)."

Section 303(e) requires States to have a continuing planning process. The initial submittal of the State process for EPA's approval was required 120 days after the 1972 amendments were enacted. Section 303(e)(2) requires the Administrator to "from time to time review each State's approved planning process for . insuring that such planning process is . consistent with the Act." Under 303(e)(3), State plans must include provisions for meeting technology-based controls, incorporating 208 plans and TMDLs, a procedure for revisions and intergovernmental cooperation, and adequate implementation of water quality standards. This seems to provide for a flexible process and plans that evolve with time.

The Management & Oversight Workgroup did not discuss, specifically, which aspects of the TMDL process should be incorporated into State-EPA planning processes/agreements. The Criteria for Approval Workgroup is expected to address the issue of whether TMDL implementation is a required component of an approved TMDL or whether implementation may be required only through the Section 303(e) continuing planning process or other State programs with EPA oversight. The Management & Oversight Workgroup will revisit the question of how to address TMDLs in the State/EPA planning process after being informed by

Criteria for Approval Workgroup's deliberations. The Management & Oversight Workgroup did, however, define some essential characteristics of a preferred approach. These include: (1) retaining some flexibility in deciding to what extent and through what mechanism TMDL activities are integrated with other State water quality protection programs (in light of the wide range of approaches States have adopted in their various programs); (2) recognition of the need for States to proceed with TMDLs in a timely manner to meet legal requirements; and (3) emphasis on maximizing efficient, cost-effective program approaches.

OPTIONS:

(1) Stand-alone approach. At one extreme, the 303(d) program would operate independently of other State water quality programs, with its own timetables, resources, reporting, public outreach vehicles, etc. Priorities would be driven by the shortfall from the "endpoint" of having all impaired waterbodies identified and all TMDLs completed. State-EPA agreements would focus on the shortfall and resources allocated to the TMDL program and would have as their singular goal achieving the "endpoint" as quickly as possible. No attempt would be made to coordinate activities which may be related or overlap.

OPTION DISCUSSION: Generally, Workgroup members voiced reservations about this option. Some Workgroup members noted that while a 303(d) program operating independently of other State water quality programs might not be hampered by other program requirements and information needs, such a program might also be unable to take advantage of the data, resources, and water quality protection or enhancement mechanisms offered by related programs. A 303(d) operating in this way could also run the risk of having to duplicate those other efforts. The Workgroup generally supported an approach that would, to some extent, integrate TMDL activities with other State water quality management activities.

(2) Hybrid approach. This approach would establish a basic program which coordinates all water quality activities including 303(d) requirements. This is similar to the integrated approach, except that initially a limited number of waterbodies would be selected for targeted TMDL efforts. This determination would be based on high impairment/vulnerability, probable early effectiveness of the TMDL approach, low resource requirements, and/or other priority considerations. This approach would attempt to balance addressing the highest priority impaired waterbodies early with maximizing the effectiveness and efficiency of State resources.

OPTION DISCUSSION: The Workgroup remarked that court orders may be one "priority consideration" that influences the order and/or speed in which waterbodies are targeted for TMDL action. Therefore, while the Workgroup supported maximum program integration (per option 3, below), it recognized that this may not be possible immediately in all areas. Where court-ordered deadlines exist, they must take priority over other considerations. However, even where this is true, an emphasis on integration in selected watersheds should be encouraged.

(3) Fully integrated approach. At the other end of the spectrum, the 303(d) program and other related programs would be fully integrated with each other. States would coordinate permitting (e.g., NPDES), water quality standards review, monitoring and assessment, non-point source initiatives, and other Clean Water Act reporting cycles with 303(d) listing activities and TMDL development. The coordinated activities could be conducted on a rotating basin or watershed basis, and/or initially focus on highly impaired (or highly vulnerable) waterbodies.

OPTION DISCUSSION: The benefits of this approach may include increased efficiency, greater public interest (created when a comprehensive decision-making process is used), better TMDL decisions, and greater overall effectiveness of State programs. For example, if TMDL submittal or approval were coordinated with NPDES permit renewals in a given watershed, TMDL waste load allocations could be immediately incorporated into permit discharge limits at the time of renewal, assuring prompt implementation of the TMDL. One possible

shortcoming to this approach is that it probably would extend the completion of all listing and TMDL development.

(B) EPA OVERSIGHT APPROACHES: What is the best approach for EPA oversight of a State's TMDL program? For example, should EPA review every TMDL or only a sample of a State's TMDLs? Should there be a priority-setting exercise for such a review?

DISCUSSION: Regular, sustained EPA oversight of State TMDL programs is necessary, given the importance of the TMDL program to the overall success of water quality programs and the many TMDLs that need to be completed. EPA also has an institutional interest in State performance, given its duty to perform when State actions are inadequate. Currently, however, there is no single model for EPA oversight of State TMDL programs.

Generally, EPA regional staff are directed to conduct a full review of all TMDLs. In some cases, the region may review every listing decision or TMDL; in others, the EPA staff may review and approve the State's TMDL listing and/or development process and then spot-check a portion of every State submittal. It may be difficult to earmark and devote the resources necessary to continue with full reviews, as the number of TMDL actions increases significantly.

OPTIONS:

(1) Full review prior to approval. Review every list and TMDL for full acceptability before approval.

OPTION DISCUSSION: This option would insure that the State submissions meet all of EPA's objective and subjective criteria and conditions and that implementation would not proceed until final approval is given. Disadvantages include: (1) potential delays in TMDL approval and implementation; (2) EPA need for additional resources to review lists and TMDLs (which may, as a result of increased State program attention, be more numerous and/or more detailed than in the past) in the mandated time frame; and (3) uncertainties/inconsistencies in EPA regions' interpretation of guidance and criteria.

(2) Expedited review and approval. EPA's review of State program actions is confined to a clear and straightforward checklist for meeting basic minimum criteria (e.g., was public review conducted). EPA's "expedited" approval would be granted within the statutory time frame of 30 days, allowing earlier implementation.

OPTION DISCUSSION: This process meets the letter of the CWA requiring EPA's approval of individual lists and TMDLs but raises the question of the level of EPA oversight required by the CWA. On the surface, at least, it does not call for EPA review of every listing decision and/or proposed TMDL. This process parallels almost all other CWA procedures, where decision-making is delegated to States and could provide an opportunity to streamline EPA's review and approval process.

The Workgroup noted that this option may also increase stakeholder comfort level in the following ways: (1) because TMDL approval criteria are clear and unambiguous, States and stakeholders would have greater certainty, reducing possible land use speculation and allowing more rational capital planning; and (2) expedited reviews remove obstacles to prompt State action for a given impaired waterbody. However, this option presupposes that an acceptable, unambiguous "checklist" for approval can be developed. *[NOTE TO WORKGROUP: This particular question will also be considered to some extent by the Listing Workgroup and the Criteria for Approval]*

(3) State certification. This would be de facto delegation. States would submit lists and TMDLs with a certification that approval criteria are met. EPA would perform post-audits to spot-check State submissions. If lists and TMDLs are inadequate, EPA would provide more specific guidance or withdraw "delegation" authority by requiring detailed EPA review prior to approval. TMDLs approved by EPA before the spot-check step would not be withdrawn upon determination of State program inadequacy. EPA's guidance would pertain only to subsequent listing and TMDL development activities.

OPTION DISCUSSION: This approach may reduce protracted disputes because issues would be mostly resolved at the State level, with EPA intervening only when there is a pattern of State neglect of the program. By this approach, EPA could focus on assuring that States have adequate programs, policies, and systems rather than on individual TMDL decisions. Workgroup members, however, viewed this approach with caution. One Workgroup member was concerned that this option may authorize EPA to withdraw its approval of a TMDL. If so, this option cannot provide the certainty States and sources need to move forward with TMDL implementation, related program activities such as permit renewals, or source activity. Another Workgroup member questioned the legality of this option by noting that the statute does not provide specifically for TMDL program delegation. Another Workgroup member commented that States' TMDL programs are generally in the formative stage and that it is likely too early to offer TMDL program delegation to States.

C) BASIS FOR EPA OVERSIGHT: Should EPA use the same oversight approach for all States or might the approach vary state-to-state? If it could vary, which factors should EPA consider in adjusting oversight of State programs:

- past performance
- experience with the TMDL program
- nature of impairments
- types of sources
- other?

DISCUSSION: EPA's oversight of State TMDL programs varies from Region to Region and often between States within a Region. While, historically, such program oversight has sometimes been minimal, EPA nonetheless has a statutory obligation to provide oversight and a strong interest in assuring the adequacy of State programs since it often must act where State actions are inadequate.

In a memorandum to EPA Regional Administrators (August 9, 1996), the EPA Assistant Administrator for Water outlined his specific expectations for EPA review and oversight of States' 1996 Section 303(d) list submittals and laid out time frames for executing such reviews. This action was brought about, in part, in response to the various TMDL-related lawsuits EPA and the States face and was intended to help provide assurances that EPA review, approval, and disapproval of State 303(d) list and TMDL submissions could withstand legal challenge.

Management & Oversight Workgroup members noted that while States generally prefer limited EPA oversight of their TMDL programs, there may also be times when greater oversight is desirable (e.g., to bring States with less experience up to an acceptable performance level, for interstate TMDLs). Workgroup members remarked that there may also be differences in emphasis among EPA oversight of State programs, of 303(d) lists, and of development of individual TMDLs.

OPTIONS (not necessarily exclusive):

(1) EPA's oversight of State TMDL programs should vary based on State experience with the TMDL and other Clean Water Act programs.

- (a) Initially, EPA should conduct detailed reviews.
- (b) States that demonstrate experience and/or strong performance in implementing CWA programs should be subject to less detailed reviews.

(2) EPA's oversight of State TMDL programs should be based on deference to State primacy, based on certain specified minimal requirements communicated in advance by EPA to the States.

(3) Review on Request. EPA should review TMDLs only when requested to do so by an affected party.

- (a) The affected party should provide substantive evidence that TMDL is suspect.

[Note: This option would appear to require a change in the regulations and, if EPA were to review only on request, may be legally problematic.]

(4) EPA oversight of State TMDL programs and individual TMDLs should vary according to degree of controversy and/or public interest. For example,

- (a) EPA should provide more detailed review of and assistance in developing controversial TMDLs or TMDLs for which there is great public interest or involvement.
- (b) EPA should provide more detailed review of interstate TMDLs.
- (c) EPA should consider "affected party requests" as a factor in selecting specific TMDLs for more detailed review

OPTION DISCUSSION: Workgroup members noted that States may appreciate EPA backing for controversial and/or high profile TMDLs. *[NOTE: This may also be taken up or be relevant to the Criteria for Approval Workgroup]*

(5) EPA oversight of State TMDL programs should vary by how conservative the State's approach to developing TMDLs is. For example, States that incorporate large Margins of Safety into waste load and load allocations would be subject to less rigorous oversight.

(D) LEVEL OF REVIEW: How detailed should EPA's review of State/Tribal 303(d) lists and TMDLs be? Should such reviews be more consistent (e.g., by requiring consistent submittals from States, through standardized checklists or other tools for use in EPA regional office reviews)?

OPTIONS:

(1) EPA should review each list and TMDL for completeness and projected effectiveness, independent of State/Tribe of origin.

(2) EPA should develop a checklist for use by States/Tribes in list and TMDL development. EPA would base its review of State lists and TMDLs (and, in part, State TMDL programs) on the checklists.

(3) EPA should develop basic checklists for use by States/Tribes in list and TMDL development. States/Tribes would tailor the TMDL checklist for specific TMDLs. EPA would base its review of 303(d) lists and TMDLs (and, in part, State TMDL programs) on the

checklists.

OPTION DISCUSSION: The Workgroup expressed interest in the checklist approach and noted that it would assure greater national consistency in 303(d) lists and TMDL development and review processes while preserving the flexibility that States/Tribes desire. The Workgroup decided to leave it to the Listing and Criteria for Approval Workgroups to decide whether to propose what criteria might be included in the checklists. Several EPA Regional Offices have already developed TMDL checklists--these may provide a starting point for subsequent checklist development efforts.

(E) STATE INCENTIVES: Should additional incentives or disincentives be devised or implemented to help assure strong State performance in the TMDL program?

DISCUSSION: Environmental groups have pressured EPA, primarily through the courts, to increase TMDL development and implementation. EPA, in turn, has worked with many States to develop plans and schedules for TMDL development and has increased its emphasis on the TMDL program through guidance and State/EPA workplan negotiations. Should EPA develop additional mechanisms to encourage greater State attention to TMDL programs? Is there a combination of incentives and disincentives that EPA can use to encourage prompt and more effective state involvement? Options include variable levels of financial or technical assistance, increased EPA review or enforcement of state-issued NPDES permits or TMDLs, restrictions (including prohibition) on new or additional discharges to impaired or listed waters, and ultimately decertification of state NPDES programs. This discussion considers and builds on ideas described in the EPA draft policy memorandum on TMDL pace and implementation that was recently circulated to the Federal Advisory Committee on TMDLs (Perciaspe, 3/21/97 draft).

OPTIONS:

(1) Reductions or increases in financial and technical assistance --

- (a) As noted in the EPA draft policy memorandum, EPA could reduce or deny substantial grant dollars to state programs for failing to carry out, in particular, nonpoint source implementation measures in TMDLs.
- (b) EPA could set aside some grant funds to reward States that demonstrate a "good faith effort" to improve or maintain their TMDL programs.

OPTION DISCUSSION: The sanction noted in the draft policy memorandum could be applied in general to States that were not showing sufficient progress on TMDLs. One unfortunate side effect of this approach would be that the less effective State programs would likely get even worse if federal funds were withdrawn. However, if EPA could provide additional funds to those States that were demonstrating commitment to the TMDL program (per sub-Option b), rather than penalizing those that were not, then the incentive or reward for strong programs would not automatically penalize residents of less effective States. This would, of course, require that EPA obtain an increase in funds beyond current levels in order to offer new financial incentives. One approach may be to shift funds from another program area into the TMDL program. Similarly, if EPA could provide additional technical assistance to States that had demonstrated such a commitment, then there would be a clear incentive for States to move forward.

(2) Heightened or relaxed level of EPA oversight or enforcement. Again, as outlined in the draft EPA memorandum, EPA could vary the intensity of its oversight and enforcement efforts, and perhaps even paperwork requirements, according to the performance of state TMDL programs. Increased EPA oversight and enforcement would likely be attempted before considering the more drastic step of EPA decertification, addressed below. However, EPA's

own resource constraints may limit the effectiveness of this approach.

(3) Heightened or relaxed program implementation by EPA. EPA could step in and develop TMDLs when States are unable or unwilling to do so. Similarly, EPA could deny NPDES permits that insufficiently reinforce water quality based limits set by TMDLs.

OPTION DISCUSSION: As with Option 2, above, EPA would likely take this approach before decertifying a State program. EPA's own resource constraints may again limit the effectiveness of this approach.

(4) Watch List -- EPA could produce a "Watch List" that identifies States that have not shown acceptable progress on TMDLs. No specific rewards or penalties for performance levels would be directly linked to the Watch List. An alternative would be to report on progress in all States (not just weak performers) and assure that public attention is drawn to the importance of making progress on impaired waters.

OPTION DISCUSSION: This option appealed to some Workgroup members who were especially interested in increasing State accountability to the public and decision-making bodies (e.g., State Legislatures or Congress) and were concerned about funding being directed away from States with weaker programs. The option is intended to focus public scrutiny on program performance, thus producing public pressure to strengthen State programs. The Workgroup discussed some possible outcomes of being on a Watch List: (1) State decision-making bodies may be more inclined to add resources to State programs so that they can get off the list; or (2) State legislators may argue for "giving back" the TMDL program to EPA. (However, some Workgroup members pointed out that private businesses generally would support State primacy, making a program "give-back" unlikely.)

(5) Prohibition on new or additional discharges--One strong motivation EPA could provide to State TMDL programs is increased attention to the prohibition on new or, in some cases, additional discharges of affected pollutants to water quality limited segments until TMDLs are developed and are being implemented. See 40 CFR 122.4(I).

OPTION DISCUSSION: According to the regulations at 40 C.F.R 122.4(I), "No [NPDES] permit may be issued [t]o a new source or new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards." Experience in Oregon has demonstrated that the specter of this prohibition can instill support for TMDL development among those most directly affected by their implementation. A variable restriction could depend upon the stage of TMDL development and implementation. Should EPA consider imposing a moratorium on all new or additional discharges, even beyond listed waters, if states refuse to implement the TMDL program? Should such a moratorium be imposed only on the listed water or on all waters in the State?

One participant on the call noted that this prohibition would primarily impact point sources and could therefore punish point sources unfairly along those waters impacted most heavily by nonpoint sources. Others noted that this option may also impact new dischargers most strongly. The Workgroup determined that to avoid such a situation, this option may need to be delineated in greater detail. The Workgroup also discussed the challenges of implementing such a policy in nonpoint source-dominated watersheds. One Workgroup member emphasized the importance of basing decisions on sound science.

(6) EPA decertification of state NPDES program -- EPA would remove authority to implement a NPDES program in States having inadequate TMDL programs.

OPTION DISCUSSION: The ultimate incentive for State TMDL program development could be the threat of EPA removal of authority or certification to implement the NPDES program in

States that do not demonstrate sufficient commitment and progress. Whether this is a serious threat in these days of budget tension is unclear. However, EPA has demonstrated its willingness to assume partial control and authority in those states where other elements of the NPDES program were unsatisfactory (e.g., EPA Region 4 assuming partial enforcement authority in Mississippi).

(F) EPA INTERVENTION: What is the appropriate threshold for EPA disapproval of proposed State (1) 303(d) lists; or (2) TMDLs?

DISCUSSION: According to Section 303(d)(1)(D) of the Clean Water Act, the EPA Regional Administrator "shall approve or disapprove [a State's] identification (i.e., the 303(d) list) and load (i.e., TMDLs) not later than thirty days after the date of submission...If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such State and establish loads for such waters as he determines necessary to implement the water quality standards..."

The Management & Oversight Workgroup opened review of this issue by discussing which factors might trigger EPA intervention/disapproval of 303(d) lists and/or TMDLs. Among the criteria mentioned were:

- (1) Sufficiency of listing decision--are specific listing decisions and/or load allocations based on sound science?
- (2) Timing of process--did the State meet all statutory, regulatory, or court-imposed deadlines?
- (3) Sufficiency of process--did the State describe the rationale for not using any readily existing and available water quality-related data and information, target TMDLs to be developed in the next two years, facilitate public review and comment on the lists, etc.?

Workgroup members agreed, generally, that criteria could be developed to help clarify thresholds for EPA disapproval of lists and/or TMDLs. Workgroup members generally agreed that States should be encouraged to use these criteria as guidance but should not consider these to be the minimum requirements for "approvability." The group did not decide, however, whether the criteria should describe the minimum that might satisfy the federal statute or require States to demonstrate a higher level of competency (e.g., consistency with applicable EPA guidance). One participant noted that some States require (by State law) that environmental protection levels be set no more stringently than the minimum prescribed by federal statute. Others expressed concern that requiring only the bare minimum might "drag back" States that have ambitious TMDL programs or otherwise discourage strong watershed management approaches.

The Workgroup closed its general discussion by agreeing that States and EPA should work through a proactive, iterative process to ensure that State 303(d) list and TMDL submittals are approvable. The process should be driven by the States but might include disincentives (perhaps along the lines discussed in Issue I(E), above) if State performance does not improve over time. One Workgroup suggested that EPA's review process might possibly include a mechanism for partial and/or conditional TMDL approval.

If the iterative process works, problems/obstacles can be addressed and resolved early on. Then, and only as a final recourse, should EPA. *[NOTE: the Workgroup did not determine at what point EPA should intervene. Its recommendations will be informed by Committee decisions on other issues such as "Pace of TMDL Development."]*

OPTIONS:

(1) EPA and States should develop an iterative approach to EPA review and approval/disapproval of State 303(d) list and TMDL submittals.

OPTION DISCUSSION: Workgroup members suggested that the review process should have checkpoints for iterative tracking of State progress toward developing approvable submittals. Problems identified by EPA at a given checkpoint might trigger increased EPA technical assistance or penalties (e.g., holding grant funds until improvement is achieved, drawing public attention to the problem, etc.). Because the statute lays out a very tight time frame for EPA review and approval/disapproval, States and EPA need to maintain close contact before the lists and TMDLs are actually submitted.

(2) EPA should set forth in guidance and checklists its criteria for approvable 303(d) lists and/or TMDLs.

OPTION DISCUSSION: The Workgroup continued to express interest in a well-developed checklist to guide EPA review and noted that this approach could provide greater certainty both to the States and to EPA. One Workgroup member pointed out that this approach can only be truly effective if States have (or have access to) all the tools necessary to meet the requirements laid out in the checklist. Another Workgroup member suggested that the checklist be annotated with references to appropriate supporting statutory, regulatory or guidance language. The Workgroup emphasized that failure to meet all checklist requirements should not trigger automatic disapproval but may form the basis for a partial and/or conditional approval decision.

(3) EPA should develop criteria for conditional and/or partial approval of TMDLs.

OPTION DISCUSSION: The Workgroup noted that this approach may provide States with an important opportunity to improve TMDL submissions without penalty and may be incorporated into an iterative review process. This approach is available to EPA Regions during their review of 303(d) lists but has not been thoroughly explored in the context of TMDL development. This issue will be considered by the Criteria for Approval Workgroup.

(G) PACE: What is the appropriate pace for TMDL development (in states without litigation)?

DISCUSSION: Some Workgroup members opened discussion of this topic by suggesting that EPA should direct all States to set a schedule for TMDL development (as EPA has proposed to do in its recent draft policy memorandum). One participant noted that EPA would likely be subject to litigation in States not establishing such schedules. The Workgroup also noted that the availability of resources is an important limiting factor to setting expeditious schedules. Resource limitations can significantly constrain both the pace of TMDL development and as the quality of TMDLs, perhaps forcing inappropriate trade-offs between pace and quality. States may be able to complete large numbers of simple TMDLs in a relatively short time frame but may need more time to address more complex water quality problems requiring extensive data and analyses. At least one Workgroup member expressed the view that pace concerns should drive resource levels and not the reverse. It was also noted that environmental agencies in some States (e.g., Oregon) have successfully sought additional resources to help meet TMDL schedules. However, it was also noted that other States do not expect resource increases in the current climate of tight budgets. [Note from the facilitator: the Workgroup has not yet discussed the implications of stakeholder involvement on the pace of TMDL development. This may be (like the quality of TMDLs) a potential trade-off concern affecting pace and scheduling.]

OPTIONS:

(1) Fixed schedule: States should develop a schedule for completing TMDLs for all waters on

the section 303(d) lists in a short time frame, (e.g., within 5 years).

OPTION DISCUSSION: The five-year schedule may be appealing to States using 5-year rotating basin plans. Under such a schedule, all TMDLs in a given watershed would be developed at the same time. This would help further a State's watershed management approach and may introduce efficiencies to the TMDL development (and, possibly, implementation and follow-up) activities.

(2) Fixed schedule: States should plan to develop an 8-13 year schedule for completing TMDLs for all listed waters, however exceptions would be considered (for shorter/longer schedules) based on:

- number of river miles for which TMDLs are needed;
- proximity of listed waters to each other within a watershed;
- relative complexity of TMDLs;
- similarities or differences among the source categories to be allocated;
- availability of monitoring data or models; and/or
- relative significance of the environmental harm or effect.

OPTION DISCUSSION: This option was originally introduced in the March 21, 1997 draft policy memorandum.

(3) Variable schedule: States would develop different time frames for complex and simple TMDLs. Simple TMDLs would be completed within 5 years, and more complex TMDLs could take much longer.

OPTION DISCUSSION: A phased approach and dynamic time frame may be appropriate to address situations where uncertainty is relatively high, (i.e., where TMDL development is less "feasible"). This could include situations where estimates of desirable loading involve significant use of best professional judgement (e.g., where narrative standards are not readily translatable into numeric targets, where legacy land use or hydromodification is contributing to impairment, where other non-chemical stressors and nonpoint sources are involved, and where available information is limited), or where program resources are limited.

(4) Dynamic mid-range time frames: Each state would make a best estimate schedule for TMDLs for each year to be included in the State's basin planning/permit planning process.

OPTION DISCUSSION: States would develop a minimum number of TMDLs every specified number of years, e.g., 5-10 TMDLs every 2 years. This could be dynamic based on the training of staff as each year progresses and the efficiency of the program based on experience. Conversely, States could develop TMDLs for a certain percentage of waters on section 303(d) lists each year for a certain number of years, e.g., TMDLs for 15% of the water each year for seven years.

II. TRIBAL ISSUES

(A) APPROVAL/AUTHORIZATION FOR TMDL PROGRAM IMPLEMENTATION

(B) EPA OVERSIGHT APPROACHES

(C) TRIBAL SOVEREIGNTY

The Workgroup has not yet discussed these issues.

III. EPA/STATE COORDINATION WITH OTHER AGENCIES AND ENTITIES

(A) FEDERAL AGENCY COORDINATION: How can federal agencies better coordinate their TMDL activities with EPA and the States?

- EPA/State coordination with other agencies having relevant regulatory jurisdiction (e.g., Endangered Species Act authorities of FWS and NMFS)?
- EPA/State coordination with other agencies having land management responsibilities (e.g., USFS, BLM)?
- EPA/State coordination with other agencies having a mission to assist in water quality protection (e.g., NOAA, USDA)

DISCUSSION: All federal agencies have a duty to meet Clean Water Act requirements. For example, federal agencies must obtain NPDES permits for their point source facilities. As well, many have water quality protection responsibilities under their own authorizing statutes. Federal facilities and land managers are also subject to TMDL requirements.

States can use the Clean Water Act's 401 water quality certification process to ensure that federal activities will not compromise water quality, but this is a reactive process that is not always effective or utilized. (There is continuing controversy over whether Section 401 applies to nonpoint source activities on federal lands.) States may also enforce their requirements against federal facilities directly. EPA may also be able to enforce point source requirements against federal facilities, but generally EPA works with other federal agencies to try to resolve issues without enforcement.

The Management & Oversight Workgroup recognized that one important challenge before EPA and the States is to determine how they can best encourage and/or ensure that other federal agencies that conduct, authorize or fund activities which might affect water quality consider the potential impacts of such activities on water quality limited segments and TMDLs. Several Workgroup members noted increased coordination among EPA, the States, and such agencies could increase the likelihood of water quality improvement through the TMDL process, especially in States with significant federal land management and ownership responsibilities.

Management & Oversight Workgroup members agreed that EPA should actively work with other federal agencies to ensure that activities they conduct, authorize or fund would not cause or contribute to water quality violations. In some cases, it would appear that federal agencies are taking such water quality considerations into account already. In others, such considerations might add a new factor to the agency decision-making criteria. The Workgroup determined that EPA should, at a minimum, ensure that all such federal agencies are aware of state 303(d) lists and ongoing TMDL development and implementation. Individual members noted that it would be unfair to ask citizen and corporate stakeholders to participate in the TMDL process if federal stakeholders are not held to the same standards.

OPTIONS:

(1) EPA should spell out the range of opportunities for coordination or participation of other federal agencies in the TMDL process through a memorandum of agreement or understanding with these agencies.

OPTION DISCUSSION: The Workgroup opened discussion of this topic by noting that because it is ultimately a federal responsibility to successfully implement TMDLs, EPA should

enter into discussions with other federal agencies to find ways of ensuring that no further degradation of water quality on impaired waters be caused by activity on federal lands. One Workgroup member noted that this may mean restricting activities previously allowed in watersheds now subject to TMDLs. Some Regions have already entered into such agreements. One Workgroup member suggested that there may also be opportunities for State agencies to enter into such agreements and that EPA might also be able to support these activities.

(2) EPA should ensure that other federal agencies having either regulatory jurisdiction or land management responsibilities are aware of which state waters have been identified as not meeting water quality standards or threatening to violate water quality standards, that each such federal agency is aware of all TMDLs that are under development or implementation, and that each such federal agency has an opportunity to participate in the early stages of the development and, as necessary, implementation of TMDLs. EPA should help these agencies give full consideration to TMDL programs in their annual workplans or funding agreements with States.

OPTION DISCUSSION: Other federal agencies provide significant financial assistance to many states for natural resource management programs, especially for coastal zone (e.g., NOAA Coastal Zone Management Program), transportation planning and construction (e.g., Federal Highway Administration), and agriculture (e.g., USDA) efforts. EPA should ensure that these agencies are aware of State 303(d) lists and the implications of listing and TMDL development and implementation.

(3) EPA should encourage other federal agencies to develop TMDLs, as appropriate, as part of their watershed processes.

(4) States should not issue 401 water quality certifications or other permits for activities that may degrade water quality along 303(d)-listed waters.

OPTION DISCUSSION: Workgroup members noted that this policy could be used also to limit nonpoint source activities (such as grazing) on federal lands.

(B) COORDINATING WITH OTHERS: How can EPA and/or States better coordinate TMDL activities with other organizations/entities' water quality protection or watershed management efforts?

DISCUSSION: EPA and/or the States may have many opportunities to foster and coordinate TMDL activities with other organizations/entities. TMDLs for waters that cross multiple jurisdiction/state boundaries necessarily require interagency coordination (and, generally, EPA involvement). As well, TMDLs initiated at a local level or by private entities require State/EPA attention. There may also be opportunities for States/EPA to use other entities' data (e.g., to make listing determinations) or to build TMDL waste load allocations and load allocations into existing watershed processes. The Management & Oversight Workgroup recognized that as resources become more critical and public interest in TMDL processes builds, these relationships may become even more important.

OPTIONS:

(1) Public Forum: EPA and/or the States should set up a public forum on TMDL activities to keep stakeholders informed and involved.

- (a) State-wide public information forum or advisory group and/or
- (b) watershed or listed water-specific forum or advisory group

(2) Public Notice: EPA and/or the States should provide stakeholder notice of TMDL progress, including timelines for comments to be submitted on various products.

(3) Share Lists/TMDLs: States should develop appropriate mailing lists (or electronic communications) to distribute 303(d) lists and TMDLs.

IV. TRACKING/REPORTING

(A) TRACKING MECHANISMS:

[Note: The workgroup recognized that their discussion of these issues will be informed by the options and recommendations developed by other Advisory Committee workgroups]

V. PUBLIC NOTICE/PARTICIPATION

(A) ENCOURAGING MEANINGFUL PUBLIC PARTICIPATION: What, if any changes are needed to provide for more meaningful public participation in the context of overall TMDL program management?

DISCUSSION: There is general agreement among Workgroup participants that meaningful public participation is essential to the successful development and implementation of 303(d) lists and TMDLs. Current EPA guidance requires "adequate public participation" in the development of 303(d) lists of impaired waters, in the prioritization of those waters for TMDL development, and in the review of TMDLs themselves. EPA's 1991 guidance specifically suggests that "involved local communities" should participate with states in the development of TMDLs. Historically, public participation has varied from State to State, and may include activities such as State register notices, State-wide newspaper notifications, and public meetings or hearings. When necessary, EPA may use similar methods, as well as the Federal Register.

40 CFR Part 25 provides the basis for public participation activities. It requires EPA and States to provide public participation "in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan or program established ...under the Act."

40 CFR 130.7 lays out these requirements in further detail:

States

- *Lists*. When developing 303(d) lists, States are required to actively solicit local, state, and federal agencies, members of the public, and academic institutions for research they may be conducting or reporting. [40CFR 130.7(b)(5)(iii)]

- *TMDLs*. TMDLs "shall be subject to public review as defined in the State CPP." [40CFR 130.7(c)(1)(ii)]

EPA

- If EPA disapproves a 303(d) list or TMDL, the Regional Administrator must "promptly issue a public notice seeking comment ... After considering public comment and making any revision he deems appropriate, the RA shall transmit the listing and loads to the State, which shall incorporate them into its current WQM plan." [40CFR130.7(d)(2)]

Some Management & Oversight Workgroup members have experienced that a legalistic approach to providing public notice has failed to inform concerned members of the public of

their opportunity to participate in the development of a TMDL. Similarly, there is at least some experience demonstrating that extra efforts to include the public throughout the process result in better implementation of TMDLs.

The Workgroup concurred that the public "buy-in" during TMDL development, especially by those stakeholders more directly affected by the implementation of TMDLs, greatly improve a TMDL's chances for speedy and successful implementation. This is especially true when the implementation of nonpoint source control programs, whether voluntary or mandatory, is required. In addition, there was some agreement that local governments have a particularly compelling argument for early and effective involvement in the TMDL process because of their potential roles as point sources, their potential involvement in nonpoint source controls, and their responsibility for public education. Workgroup members, in general, emphasized the importance and value of engaging affected members of the public early on in the process (e.g., before the 303(d) list is compiled) and of encouraging their sustained interest and involvement through the drafting and implementation of the TMDL.

Workgroup members also recognized, however, that increased efforts to involve the general public and, especially, important stakeholders in the TMDL process in a more meaningful way may require some increased commitment of resources from State or federal agencies and may affect the pace of TMDL development, especially in early stages of the process.

The Workgroup further noted that while strong public involvement is desirable and important, statutorily-established time constraints around EPA's approval/disapproval of lists and TMDLs may limit such opportunities at the federal review stage. This may make early involvement in the development stage even more important. Throughout the TMDL process, States and EPA will need to balance the desire to have greater, more meaningful public involvement with the time and program resource constraints of TMDL programs.

OPTIONS:

(1) Maintain current public notice and comment regime.

OPTION DISCUSSION: Current public participation guidelines flow mainly from general EPA regulations found at 40 CFR Part 25, above. Basically, public notice and an opportunity to comment is required when a proposed 303(d) list or TMDL has been developed. Some Workgroup members suggested that States should solicit public input before a list or TMDL is proposed, especially in cases where public/stakeholder "buy-in" is important to build a foundation for future implementation.

(2) Require some additional opportunities for public participation.

This draft document is for DISCUSSION PURPOSES ONLY and is not for citation or quotation. This draft was prepared for members of the Federal Advisory Committee on TMDLs and does not necessarily reflect the Committee's views or those of EPA. Opportunities for public hearings, public meetings, advisory groups and other means of public participation are described in Part 25, but their use is left up to the discretion of the State agency (though some combination is generally expected for "significant" decisions or controversies). EPA guidance could clarify that these and other additional steps should be taken if any reasonable public interest is demonstrated.

OPTION DISCUSSION: Workgroup members suggested that additional public participation may be desirable especially in high profile watersheds and in watersheds with large nonpoint

source communities. Where possible, stakeholders should be engaged early on in the decision-making process and should not be asked only to comment on State and/or EPA-proposed actions.

(3) Require meaningful and timely notice to all affected parties or stakeholders; actively solicit participation of all affected local governments, civic and trade associations, community and environmental groups; ensure publicity about TMDL process and implementation reaches general public, especially potentially affected parties.

(a) States should distribute a written schedule that lays out public participation opportunities relating to list and TMDL development activities.

(b) States should develop mailing lists (preferably electronic) of all interested parties/stakeholders in a given watershed.

OPTION DISCUSSION: Workgroup members pointed out that citizens often feel like they have been left out of key early TMDL activities and are therefore less willing to participate in later activities. The Workgroup suggested that States and EPA should explore what additional mechanisms may be available to inexpensively and effectively increase public involvement early on in the development of 303(d) lists and in the development and implementation of TMDLs themselves. To the extent some additional efforts and expenditures are likely to be required of many affected individuals and interests, it is critical to gain their early and meaningful participation in the process.

(4) States/EPA should be encouraged to educate their citizens about the TMDL process.

(a) States may want to establish a website that provides basic background information about the program as well as a schedule of TMDL-related activities.

(b) States may want to develop high school or university educational modules pertaining to water quality, including TMDLs.

OPTION DISCUSSION: Workgroup members emphasized that citizens want to (and need to) understand the TMDL process in order to participate most effectively in it. Investing in citizen education up front may save time and other State/EPA staff resources during subsequent public input into 303(d) list and TMDL development activities.

(5) States should encourage local governments, regulated entities, or community organizations to take the lead in TMDL development for their watersheds.

OPTION DISCUSSION: One Workgroup member noted that stakeholders may not want to wait for State agencies (or EPA) to launch TMDL development activities. Another individual commented that these decentralized, locally driven TMDLs can be quite successful and that States should encourage and support them as best they can. The Workgroup talked generally about how States or EPA may best do this.

(B) CITIZEN MONITORING: Should citizen monitoring be encouraged and incorporated into the TMDL listing, development, and approval processes? If so, how?

Citizen monitoring is encouraged and used in many State water quality programs. EPA's guide, "Volunteer Water Monitoring: A Guide for State Managers," recognizes "the benefits of citizen monitoring both as a source credible data and as a public education tool that encourages a sense of stewardship for our water resources." Citizen data is commonly used for screening or identifying potential water quality problems or as baseline data for waters not currently monitored by States. While there is currently no national guidance on using citizen volunteer monitoring data for the development of 303(d) lists and TMDLs, some States may be indirectly

using this data in list development. Most States rely heavily on 305(b) reports when developing their 303(d) lists, and current 305(b) guidelines encourage States to use data from volunteer monitoring groups. In fact, approximately 25 States currently use citizen group data for their 305(b) reports.

Data Quality. One challenge facing States with active volunteer environmental monitoring programs is to establish and communicate data quality requirements to the monitoring groups. As a rule, States lay out these requisites in Quality Assurance Project Plan (QAPP) requirements. To get State approval, citizen groups generally have submitted to intensive volunteer training programs and agreed to follow the State-approved data collection and analysis protocols laid out in their QAPP. Management & Oversight Workgroup members felt strongly that States should neither create obstacles nor lower their data quality standards for citizen groups interested in providing data to the TMDL program. Ultimately, however, the decision to include citizen monitoring data (and for what purpose) depends on the best professional judgment of State/EPA staff.

OPTIONS:

(1) States will determine when to use citizen monitoring in the TMDL program, utilizing best professional judgment when assessing the credibility and usefulness of the data.

OPTION DISCUSSION: One Workgroup member noted that some States (e.g., Oregon) "weight" the credibility of individual volunteer monitoring efforts' data submissions. Others noted that this process may be quite time-consuming.

(2) Citizen monitoring data should be used in the TMDL program only if the volunteer program has an approved Quality Assurance Project Plan.

OPTION DISCUSSION: Workgroup members noted that individuals who question the quality of data collected by citizens may be more comfortable with a State's using only QAPP-quality data (i.e., data that meets State-set criteria). Given the environmental and economic consequences that could ensue and the risk of litigation if questionable data were used, members felt this would be a reasonable approach.

(3) States should only use citizen monitoring data as an indicator, or for tracking purposes. Such data should not be used as a basis for 303(d) listing, TMDL development, or TMDL approval. Such data can be used as an indicator for state monitoring activities.

OPTION DISCUSSION: If QAPP-quality data were not assured, States might still use the data for targeting purposes.

(4) States should clearly announce a schedule and opportunities for citizen monitoring data.

- (a) States should develop clear data submission procedures (describing when/how to submit; in what format)
- (b) States should specify how the data will be used.

OPTION DISCUSSION: Workgroup members believed that States should clearly state how (and when) they intend to use data collected by citizens so that all parties invested in doing so may submit available data for consideration.

Total Maximum Daily Load (TMDL) Program

5/27/97

Science and Tools Workgroup Summary Report

Introduction

At its first meeting in November 1996, The Committee formed a Science and Tools Workgroup to investigate issues and needs relating to the science and tools necessary to support the TMDL program. Following some initial discussions, the Science and Tools Workgroup focused on identifying broad priorities for EPA regarding science and tool development in order to strengthen the TMDL program. To accomplish this, the Workgroup developed and administered a survey to the Committee, asking members to rank science and tool development needs in order of priority. In a series of teleconference meetings, the Workgroup analyzed the results of the survey, and discussed priority topics in more detail. The survey and the detailed discussions form the basis of the Workgroup recommendations for the full Committee to consider.

This report summarizes the Workgroup's activities since its inception, the Workgroup's development and analysis of the survey, and presents highlights of the detailed discussions of priority topics identified from the survey. It should be noted that the Workgroup has not yet concluded its activities; additional teleconferences are planned to discuss training, monitoring, and decision-making under uncertainty more fully.

Attachments to this report include the Science and Tools Workgroup's original issue list (Attachment 1), The Science and Tools Survey Instrument (Attachment 2), the results of Committee members completing the survey (Attachment 3); and a draft Training Matrix developed by the Workgroup to assist in identifying training priorities (Attachment 4).

History of Workgroup's Discussions prior to the Galveston Committee meeting

Following its formation at the first full Committee meeting in November 1996, the Science and Tools Workgroup met via teleconference three times prior to the Committee's second meeting in Galveston, Texas in February 1997. On those teleconferences, the Workgroup refined a list of issues brainstormed by the full Committee at its first meeting in Herndon, Virginia (see Attachment 1), and attempted to develop options to some of the issues. The Workgroup spent much of its time discussing issues related to the appropriate "level of rigor" for TMDL development, and decision-making under uncertainty. The Workgroup soon concluded that the question of level of rigor, while important, was difficult to discuss out of the context of the decision to be made, such as decisions relating to TMDL listing and development.

While the Workgroup did not identify consensus recommendations prior to the Galveston meeting, it did agree on the following basic points:

Tailoring: The Workgroup agreed with the general concept of tailoring, i.e., that the degree of rigor should be higher when the consequences of the decision are greater. However, the Workgroup surmised that few situations remained where the consequences of a TMDL were insignificant enough to warrant a low degree of rigor.

Increased rigor: The Workgroup generally felt that EPA and States should endeavor to enhance the science, technical tools, and level of rigor associated with all aspects of the TMDL program. The Workgroup noted that demonstrating a high degree of rigor is important to obtaining stakeholder support for TMDL development and implementation, and withstanding legal challenges.

Decision making under uncertainty: While increased rigor is desirable, the Workgroup noted that there are instances where it will be necessary to move forward without complete or perfect scientific information. The Workgroup felt that it would be important to devise methods to move forward in situations of uncertainty, and that stakeholders be involved with these decision-making processes.

Survey preparation and distribution

At the February 1997 full Committee Meeting in Galveston, Texas the Committee discussed the question of the appropriate level of rigor and decision-making under uncertainty, and agreed with the Workgroup that such questions are difficult to resolve outside of the context in which a decision is being made. The Workgroup suggested to the Committee that it focus on providing advice to EPA on priorities for science and tool development. The Committee agreed with this approach, and with the suggestion that the Workgroup survey the Committee for what members felt were science and tool development priorities for a strong TMDL program. At the meeting, the Committee also brainstormed potential priority topics that might be included in a survey instrument.

In a series of teleconferences following the Galveston meeting, the Workgroup used feedback obtained at the full Committee meeting to develop a "Science and Tools" survey for the full Committee (See Attachment 2). The Survey asked respondents to rank the topics in order of priority, and to identify aspects of topics that they felt were particularly important. The raw results of the survey appear in Attachment 3. The topics of the survey were:

1. Developing numeric criteria
2. Assisting in establishing quantitative endpoints for developing TMDLs addressing non-numeric criteria, and in developing alternative quantitative methods to use in TMDL development (i.e., other than loads)
3. Developing "wet weather standards"
4. Providing training and other technical assistance
5. Improving monitoring
6. Assisting in decision-making under uncertainty

7. Improving modeling
8. Obtaining/compiling information on best management practices
9. Assisting in stakeholder communication
10. Gathering information on costs associated with TMDL development and implementation
11. Developing methods/tools to assist in evaluating TMDL effectiveness

Workgroup's Interpretation of the survey results

All but four Committee members responded to the survey. The Workgroup examined each topic's frequency of receiving a priority ranking in the top 5, the top 3, and the number of #1 responses each topic received. The Workgroup also examined the average rank for each topic, and the "weighted average" of the responses where the topic was ranked in the top five. The Workgroup's analysis of the responses suggested that there should be three "tiers" of priority for science and tool development.

The highest "tier" includes: topic #2 (assisting in establishing quantitative endpoints for developing TMDLs addressing non-numeric criteria, and in developing alternative quantitative methods to use in TMDL development); topic #5 (monitoring); topic #6 (decision-making under uncertainty); and topic #7 (modeling). The responses suggest that the Committee feels EPA should give the highest priority to science and tool development needs associated with these topics.

The middle "tier" includes: topic #1 (numeric criteria); topic #3 (wet weather standards); #4 (training); and topic #8 (BMP effectiveness). The results suggest that the Committee feels that science and development needs relating to these topics should receive moderate priority.

The lower "tier" includes: topic #9 (assisting in stakeholder communication), topic #10 (gathering information on costs associated with TMDL development and implementation); and topic #11 (tools to assist in evaluating TMDL effectiveness). The results indicate that the Committee feels that science and development needs relating to these topics should receive *relatively* lower priority than the others. However, it should be noted that the "low" ranking does not necessarily diminish the importance of any of these topics. In particular, several Workgroup members were concerned that the importance of stakeholder communication be recognized, emphasizing its importance to decision-making under uncertainty (one of the "high priority" topics).

After some discussion, the Workgroup decided to move the topic of "training" to the highest priority tier. The Workgroup felt that training and technical assistance was a high priority for the TMDL program, and also that it related to many (if not all) the other topics in the survey. Moreover, it was the only survey item that addressed the methodology of technical transfer (the others focused on a particular tool or substantive area of the TMDL program). The Workgroup felt it might be useful for the Committee to advise EPA on appropriate methods of training and technical transfer.

The Workgroup decided to discuss the high priority topics in more detail in a series of teleconferences. Upon examining the survey more closely, the Workgroup decided that topics #2 (development of quantitative methods) and #6 (decision-making under uncertainty) were somewhat related. Both address the need to develop tools and methodologies to move forward

with TMDL development in instances of uncertainty, where quantitative information is extremely difficult to obtain, or is not obviously in terms of pollutant loads. The Workgroup noted that this "high priority" topic was consistent with the Workgroup's concern with the importance of maintaining a high level of rigor and decision making under uncertainty, which dominated the Workgroup's initial discussions. The Workgroup also briefly discussed item #1 (development of new numeric criteria).

To summarize, the Workgroup decided to discuss the following topics, in the following order:

- Training (#4)
- Development of new numeric criteria (#1) Briefly
- Monitoring (#5)
- Modeling (#7)
- Decision-making under uncertainty (#2, #6)

Each of these topics were discussed on separate teleconferences. Prior to each teleconference, the Workgroup asked EPA to prepare brief background information pertaining to the topic, which included EPA's current and planned activities, and perceived needs or challenges from EPA's perspective. The Workgroup requested this information so that it could make informed and useful suggestions to EPA on overall priorities. Realizing the complexity of each topic, the Workgroup has not yet attempted to make detailed recommendations. However, the Workgroup felt consensus on general priorities among diverse external perspectives represented on the Committee may provide useful input to EPA as it moves forward with science and tool development to strengthen its TMDL program.

Summary of Workgroup Discussion of Priority Topics

Note: These topics are presented in the order in which they were discussed.

Topic #4 (Training)

The results of the survey did not indicate a clear Committee preference for which substantive areas of TMDL development additional training or technical transfer is necessary. There also were differences of opinion within the Workgroup; certain members felt that additional training/technical transfer is most important in TMDL listing, others in assisting States make and document assumptions, and others in TMDL implementation.

The Workgroup recognized that training/technical transfer could take a variety of forms, such as a SWAT team, a formal training workshop, a template, a guidance document, an approval checklist, and many others. The Workgroup brainstormed several different methods that may work well in certain instances, including video teleconferencing and computerized checklists.

The Workgroup soon realized that it was important to separate the question of which format of training/technical transfer was most appropriate from the question of which areas of TMDL development training/technical transfer was most needed. The Workgroup recognized that different methods of training would be more appropriate in different instances. To flesh this out in more detail, the Workgroup developed a survey in "matrix" format, which individual Workgroup members completed. The survey matrix asked respondents to rank substantive

areas for additional training/technical transfer (L,M,H) in terms of importance, and also to rank (L,M,H) the suitability of different methods for each substantive area.

To date, three Workgroup members completed the matrix, which appears in Attachment 4. The results suggest that:

- Tools such as templates, checklists, policy memos and guidance could help foster more clarity of TMDL program expectations, promote more consistency among States, ensure the TMDL program is administered correctly and thoroughly, and assist States and EPA document and justify TMDL program activities.
- Significant policy development (guidance, policy memoranda) is needed to clarify certain aspects of 303(d)(1) listing, TMDL development, and post-TMDL development (i.e., evaluation).
- EPA should explore new methods, such as computerized checklists and satellite training, to achieve technical assistance objectives cost-effectively.
- Particularly important areas for EPA to provide training/technical assistance to States include: creating listing criteria, establishing a margin of safety, applying models, addressing future growth, developing and implementing phased TMDLs, implementing control actions, understanding how water quality standards are to be applied in the TMDL, and how to make assumptions used in the development of the TMDL (when and how to use best professional judgment). States and EPA do not yet have much experience carrying out many of these activities.

The Workgroup plans to further discuss the topic of training/technical assistance in future teleconferences, and will likely continue to refine its proposals.

Topic # 1 (New numeric criteria)

The Workgroup did not discuss this topic in great detail. The Workgroup did not initially identify any significant omissions to ongoing EPA efforts to develop additional numeric criteria (as described in the background material prepared by EPA); however, the Workgroup may wish to discuss the issue of how to appropriately incorporate drinking water uses in numeric criteria. In addition, the Workgroup expressed an interest in learning more about the templates under development by EPA to assist in developing TMDLs in instances where numeric criteria are lacking (nutrients, sediments, etc.), and may desire to comment on them. *[Placeholder for further discussion of drinking water concerns and the templates; discussion of the templates may occur under "decision making under uncertainty"]*.

Topic #5 (monitoring)

On its initial teleconference to discuss monitoring, the Workgroup primarily received information from EPA on the Intergovernmental Task Force on Monitoring-Water Quality (ITFM), a Federal, State, and Tribal partnership that has proposed changes in water quality monitoring to support sound decision-making at all levels of government. The ITFM has addressed in its recommendations many of the concerns expressed by the Committee in its survey, in particular standardizing monitoring data, reducing waste in monitoring, and the design of monitoring strategies. The background material also emphasized that monitoring data are collected by numerous different agencies and institutions for a wide variety of purposes, and that because of this EPA has limited ability to "control" monitoring activity.

In its discussion of monitoring, the Workgroup recognized the vast scope of monitoring activities. The Workgroup supported the implementation of the ITFM's recommendations, although it also expressed some concern about the likelihood and speed with which the ITFM recommendations would be carried out. However, the Workgroup noted that the ITFM did not specifically address monitoring improvements needed for a strong TMDL program. In addition, the Workgroup reiterated the Committee's belief (as reflected in the survey results) that improvements in monitoring should be a high priority for EPA as it strengthens the TMDL program. In particular, the Workgroup felt that EPA could and should address monitoring needs related to TMDL listing (or pre-TMDL development), TMDL development, and post-TMDL development (e.g., evaluation). This might include such things as ensuring data are gathered for all aspects of water quality standards, ensuring that data suitable for TMDL development (including model application) are collected, and meeting monitoring needs for evaluating the effectiveness of TMDLs and control actions. The Workgroup felt it appropriate to conduct another teleconference to develop additional general recommendations for EPA on monitoring improvements. *[Placeholder for further discussion of monitoring, to occur after the Milwaukee meeting].*

Topic #7 (Modeling)

Prior to its discussion on modeling, the Workgroup received background information from EPA that described current activities regarding model development and support, and that described planned EPA activities such as those mentioned in the draft TMDL implementation strategy. The Workgroup recognized that it did not possess the technical expertise to allow detailed recommendations on modeling, and kept its observations at a general level. The Workgroup organized its discussion to follow Topic #7 of the Survey, discussing each of the sub-topics in turn. The discussions primarily focused on commenting on proposed EPA activities relating to each sub-topic.

Subtopic b: efforts to improve model application (more effort toward improving understanding of how to properly use existing models and interpret results, rather than develop new models).

This topic was addressed first because many Committee members ranked it as a priority within the topic of modeling in their survey responses. The Workgroup agreed that this was a high priority. Several Workgroup members felt that problems with models are often due to a poor understanding of which models to use, data requirements for models, how to use them, and how to interpret results. The Workgroup strongly supported the development and operation of a modeling center, in addition to current and planned activities such as SWAT teams and the continued refinement of BASINs. The Workgroup felt that the model BASINs could be made easier to use as well as more robust and useful by distributing it for greater peer review, incorporating the comments of a variety of experienced professionals as well as potential users.

Subtopic c: efforts to improve model accuracy (more effort on validation and calibration).

The Workgroup agreed that this was important, and supported existing efforts to improve the accuracy of existing models. However, one Workgroup member indicated that models may never be sufficiently accurate to be used for regulatory development (or as the only basis of making decisions). This underscores the importance the Workgroup (and the Committee) places on developing tools and approaches to assist in decision-making under uncertainty.

Subtopic d: efforts to develop better probabilistic modeling techniques

One Workgroup member expressed a concern that probabilistic modeling approaches were not well suited to developing reliable daily, weekly, or monthly output that may be necessary for TMDL development. However, there was some discussion that probabilistic modeling techniques may provide useful input to management decisions, e.g., by predicting that a certain

set of controls will meet water quality standards a certain percentage of the time. Another Workgroup member indicated that other regulatory programs are moving toward probabilistic modeling techniques, which offers the potential for lower cost modeling applications due to fewer data requirements. Apart from these concerns and observations, the Workgroup did not comment on EPA's plans to devote effort to validating probabilistic modeling techniques.

Subtopic e: guidance on use of models and other analytical tools in a variety of geographical settings

The Workgroup did not discuss this issue at length, but generally agreed that case studies can be effective and useful ways to provide information on the use of models in a variety of settings.

Subtopic a: efforts to further develop models

The Workgroup did not comment on whether any of the topics for additional model development listed in the survey required further effort. This reflected the belief that a relatively higher priority may be to provide assistance in model application and further developing existing models (as well as the Workgroup's lack of detailed knowledge regarding modeling capabilities). However, the Workgroup identified one possible area for future model development, not mentioned in the survey instrument. The Workgroup was unsure whether modeling capabilities include an ability to predict what may happen to an impaired water once a stressor is eliminated or a pollutant reduced. In developing and evaluating TMDLs, it may be important to understand how differently polluted waters "behave" compared with "clean" waters.

Relative priority of modeling sub-topics

The Workgroup expressed a belief that more effort in all of the modeling sub-topics identified in the survey was desirable. When asked to assess which of the modeling sub-topics was *relatively* of higher priority, several Workgroup members indicated sub-topic b. (improving model application). This indicates a high degree of support for efforts to improve the capabilities of existing models, for the provision of EPA guidance on model application (including guidance on the limitations of models, assumptions contained in models, and the appropriate uses of models), and assistance in model application (such as through SWAT teams and a modeling center).

Topic #2 and Topic # 6 (Decision-making under uncertainty)

[Placeholder for future discussion].

Total Maximum Daily Load (TMDL) Program

MEMORANDUM

TO: TMDL FACA Committee

FROM: Members of the Criteria for Approval Workgroup

DATE: 5/27/97

RE: Criteria for Approval Workgroup Discussion Questions and Workgroup Materials

Following the Galveston Committee Meeting, the Criteria for Approval Workgroup met six times via teleconference. After refining its issues list, the Workgroup decided to give highest priority to issue area 1 (general approval requirements) and issue area 5 (implementation). Attached are materials being used by the Workgroup in its discussions. They include: a document describing a "hierarchy or matrix" approach to TMDL development, a document summarizing issues and options discussed, and the current draft of the Workgroup's Reorganized Issue List.

The Criteria for Approval Workgroup recommends that, at the June meeting, the Committee concur on the following two statements:

1. "Hierarchy" approach to TMDL quantification requirements:

The attached Workgroup discussion draft outlines a "hierarchy or matrix" approach to EPA's review and approval of TMDLs. With this approach, the stringency of approval requirements for TMDLs would differ based primarily on the degree to which aspects of the TMDL can be rigorously quantified. An "inverse proportionality" principle would lead to more rigor being required in some aspects of a TMDL when certain other aspects cannot be quantified with a high degree of confidence. For example, TMDLs consisting of a set of control actions, rather than a fully quantified ambient loading endpoint and specific load allocations, could be approvable in certain circumstances if alternative, specific (rigorous) components are included, such as detailed provisions for evaluation and potential revision, more EPA oversight of implementation, and more stakeholder involvement. This approach offers incentives for quantification and rigor in all aspects of TMDL development, but at the same time allows for and encourages forward progress in establishing TMDLS in cases of uncertainty. The Workgroup believes that this approach may

apply to many of the issues being addressed by the Criteria for Approval Workgroup, and potentially other Committee Workgroups as well. The Workgroup recommends that the Committee adopt this approach and will continue to refine the approach if the Committee agrees.

Do you agree with the Workgroup's recommendation? If so, do you strongly support some features of the approach? If so, which ones and why? If not, do you disagree strongly with certain features of the approach? If so, which ones and why?

2. Implementation of TMDLs

The Workgroup believes that implementation is essential to the success of the water quality program and recommends that the Committee strongly endorse the following federal requirement that would ensure that implementation occurs. The Workgroup recommends that EPA develop regulations that require the inclusion of implementation plans and schedules in a TMDL in order for the TMDL to be approvable. Implementation provisions should include schedules with measurable milestones for carrying out specified control actions, monitoring and evaluation provisions, and reasonable assurances (which could include nonregulatory approaches) that the control actions will be carried out (including the consequences that would ensue if they are not carried out). Specifically, the Workgroup recommends the Committee adopts option 1 for its issue 5.a (implementation assurances), as outlined in the attached "Options Discussion" draft.

Does the Committee agree with the Workgroup's recommendation that implementation be a required component of a TMDL, necessary for approval? [Note: if the Committee agrees with the Workgroup's recommendation, other issues will then have to be pursued (for example, the type of implementation provisions that should be included, and how EPA can ensure implementation occurs if EPA rather than a State or Tribe ends up developing a TMDL); the Workgroup would then invite ideas from the Committee on these questions]. If the Committee disagrees with the Workgroup's recommendation that implementation be a required component of a TMDL, how can implementation otherwise be assured?

Total Maximum Daily Load (TMDL) Program

DRAFT 5/27/97

Criteria for Approval Workgroup Summary of Options Discussion

Note to Committee: This draft document presents options identified and issues discussed by the Criteria for Approval Workgroup to date. The issues are those for Issue Area 1 (General TMDL Approval Requirements) and Issue Area 2 (Implementation), which the Workgroup identified as highest priority and chose to discuss first. (See Attachment A for the Criteria For Approval Reorganized Issue List) Please note that options for several of the issues under issue area 1 and 5 have not yet been identified. It should be emphasized that the Workgroup attempted to identify a wide range of options for each issue, and that the options presented do not imply any Workgroup (or individual member) support for them. Many members are likely to disagree with selected options for various issues, but this disagreement was not sought after or noted at this time. At the point where the Workgroup attempts to reach consensus, such disagreement will be recorded.

ISSUE AREA 1: GENERAL TMDL APPROVAL REQUIREMENTS

a. Definition: Are changes needed in EPA's regulatory definition of a TMDL? If so, what are they? Should further EPA guidance be developed to define the basic elements of a TMDL? If so, what should it address?

ISSUE DISCUSSION

Currently, federal regulations (40 CFR 130.2(i)) characterize a TMDL in mathematical terms: a TMDL is the sum of the individual wasteload allocations for point sources, load allocations for nonpoint sources, natural background, and a margin of safety to account for uncertainty. Some have questioned whether this regulatory definition of a TMDL is useful and appropriate in all contexts. According to the CWA section 303(d), TMDLs must be established at a level necessary to implement the applicable water quality standards with seasonal variations and a

margin of safety to account for uncertainty. According to an EPA December 28, 1978 Federal Register notice, TMDLs are appropriate for all pollutants. However, some water quality impairments may not be caused by pollutant loadings but by habitat modification, flow alterations, withdrawals, or a combination of factors.

The basic issue is whether, to determine or support TMDL approval criteria, it is necessary to change the definition.

OPTIONS:

1. Definition status quo: Leave the definition in the current form.

OPTION DISCUSSION

The current regulatory definition may be sufficiently flexible to fit all types of situations and approaches. Even if more specificity on what constitutes an approvable TMDL (or different types of approvable TMDLs) is desirable, the regulatory definition may not be the best place to provide that specificity.

2. More specificity: Provide more detail on what is required in a TMDL than the current mathematical equation.

OPTION DISCUSSION

A more detailed definition may enable a better understanding between EPA and the States on what constitutes an approvable TMDL and therefore help to assure greater consistency in program implementation and more certainty among affected stakeholders. However, it would run the risk of not being as flexible as the current broad definition. It is also not clear what additional detail would be appropriate.

3. Define different types of TMDLs: For example, provide more specificity on what constitutes a "simple" TMDL, a "complex" TMDL, a "non-point source only TMDL", etc.

OPTION DISCUSSION Specifically defining (in regulations or guidance) different types of TMDLs may enable EPA and the States to better understand and agree on the range of approval requirements and EPA review procedures. For example, clear, specific criteria for a simple TMDL might eliminate the need for detailed review by EPA. However, for complex TMDLs, where impairments are due to a variety of point and non-point sources, including agriculture, urban stormwater runoff, municipal sewage treatment, and industrial sources, a more general definition would allow for greater flexibility in developing an approvable TMDL (but also may necessitate a more careful review for approval).

4. "Sound bite" definition: Because the current regulatory definition may be difficult to understand, a short, "sound bite" definition for a TMDL may be useful in communicating to stakeholders (including the general public) the fundamental characteristics of a TMDL.

OPTION DISCUSSION

The Workgroup did not discuss this at length. A "sound bite" definition might be useful in various contexts, perhaps in addition to a regulatory definition since it would have a different purpose. If desired, this could be

developed without a regulatory change. However, the Workgroup did not discuss whether it may be desirable to have only one definition of a TMDL. [Note: if desired, this option could be adopted in addition to one of the above.]

GENERAL DISCUSSION OF OPTIONS

Several workgroup members agreed that more specificity in what constitutes an approvable TMDL was needed. However, the Workgroup did not reach consensus on whether the regulatory definition was the appropriate place to provide that specificity. The workgroup felt that it was premature to discuss the definitions of different types of TMDLs and the need for a change in the regulatory definition before it had discussed the need for different types and overall characteristics of approvable TMDLs. For these reasons, the workgroup decided to postpone further discussion of this topic.

[It should be noted that the workgroup identified another potential issue, which is also being considered by the Management and Oversight Workgroup: Should there be a policy of "presumptive approval" for TMDLs that EPA does not carefully review or does not review within a specified timeframe? In some States, an agreement is in place whereby EPA carefully reviews only a portion of a State's TMDLs; in other cases, EPA Regions carefully review all TMDLs. This issue may become more pressing as the volume of TMDLs submitted for EPA approval increases.]

b. Quantification: Should a TMDL always be quantified? (For example, could a set of control actions be approved as a TMDL?) If not, under what circumstances can a TMDL not be quantified? Which aspects of a TMDL (endpoint, loads, control actions) may not require quantification? Should there be any additional requirements for "non-quantified" TMDLs?

ISSUE DISCUSSION

The Water Quality Planning and Management regulation (40 CFR 130.7(c)(1)) states the following:

TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical WQS with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. Also, 40 CFR 130.2(i) states that TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

The mathematical nature of the regulatory definition of TMDLs implies an expectation that TMDLs be quantified, and this has generally been EPA's approach. However, the Section 303(d) list includes waterbodies that are impaired by many types of stressors, including nutrient loadings, habitat modification, sediment contamination, and toxics transported by atmospheric deposition. There are numeric criteria in water quality standards for only some of the different causes of impairment. In situations where numeric criteria are lacking, it is often possible to develop a quantitative endpoint (to judge "success.") However, in some cases where numeric criteria do not exist, establishing a quantitative endpoint may be extremely

difficult.

¹ An endpoint in this context is a measurable environmental characteristic (e.g., dissolved oxygen concentration, total phosphorus concentration, temperature, density of trout) that is related to the waterbody's valued characteristic (such as beneficial use component of a WQS). Numeric criteria in WQS, where they exist, also serve as endpoints.

Several other aspects of TMDL development also involve quantification, such as: calculating a total load (or exposure level), allocating loads, and determining control actions. In some cases, quantifying these aspects of TMDLs may also be difficult.

² Total load, in this context, refers to targets related to the reduction in pollution severity, "pollution" being broadly interpreted to include man-induced alterations to the environment. By contrast, endpoints are targets related to the health of the waterbody or the "desired state."

The issue is whether, to most effectively address water quality impairments and meet statutory requirements for TMDLs, it is always necessary to quantify all aspects of a TMDL.

OPTIONS:

(1a) TMDLs must be quantified to be approvable. Generally, all aspects (endpoints, total load, load allocations, control actions) of TMDLs (both those addressing standards with numeric criteria, and standards with narrative criteria) should be quantified. However, for situations where numeric criteria do not exist, EPA should prescribe acceptable types of quantification methods (to determine measurement endpoints or total loads) for an approvable TMDL. (These measures can be in a variety of forms, such as pollutant concentration, mass loading, biological richness/diversity, total toxicity, or some numeric measurement of the physical condition of the waterbody).

(1b) TMDLs must be quantified to be approvable; however, States should have considerable latitude to choose the most appropriate method of quantifying a TMDL (to determine endpoints or total loads), depending upon the circumstances as long as the measure has utility in directing controls and solving the water quality impairment. A State could creatively tailor the quantification procedure to what works best for each situation. For example, to address a habitat impairment, a State might select (or define hypothetically) a "reference stream" using biocriteria/indices for habitat, biological diversity, etc., and measure the deviation of the "reference stream" with the 303(d)-listed stream. For example, one could take the percent cover from a "reference stream" and use that as a numeric target for a stream impaired by temperature.

States/Tribes should endeavor to quantify all aspects of TMDLs (endpoints, total load, load allocations, control actions) to the fullest extent possible. However, EPA would recognize that for some impairments, quantification may not be appropriate or cost-effective (i.e., quantifying all aspects of a TMDL may absorb resources that stakeholders agree could be better spent on implementation activities). EPA could allow States some flexibility not to quantify some aspects of TMDLs (for example, establishing endpoints) if the State/Tribe demonstrates that the TMDL meets certain criteria, such as: the TMDL is relevant to the problem, appears to be sufficient to attain the relevant narrative water quality standards and/or beneficial use designations, and has utility in directing controls. Under this option, a set of prescribed control actions (without quantifying an endpoint or total load) may be acceptable as a TMDL.

- Similar to #2a above, but EPA specifies the situations (and/or criteria) for which non-quantified TMDLs may be appropriate and/or approvable, to
- (2b) promote consistency across States. Non-quantified TMDLs would also face additional (or more rigorous) approval requirements from EPA, which are made clear to States in advance of TMDL development.
- [Similar to #2a and #2b above] Non-quantified TMDLs are viewed as one level of a "hierarchy of TMDLs". The hierarchy approach indicates a preference (and may provide incentives) for quantification, but recognizes
- (2c) that quantification is not possible or appropriate in all instances. TMDLs without quantification are "lower" in the hierarchy, and as a result face more rigorous review requirements during both TMDL development and implementation [see Draft "**Outline of Hierarchy or Matrix Approach**"]

GENERAL DISCUSSION OF OPTIONS

The workgroup recognized that there are several aspects of TMDLs that lend themselves to quantification. For example, one quantification step relates to defining "the problem" (i.e., for Section 303(d) list purposes, and identifying the sources or causes of the impairment); another step relates to developing the "solution", i.e. quantifying the total load, allowable loads, and controls. The workgroup agreed that it would be important to keep in mind these different aspects of TMDL development when discussing quantification.

As one example, the workgroup discussed whether a TMDL could be quantified for fish advisories, which may be caused by legacy problems and/or atmospheric deposition, often from sources outside State boundaries. After some discussion, the workgroup observed that in some cases (such as certain fish advisories) it may be possible for States to quantify only some aspects of a TMDL, i.e., the nature of the problem. One workgroup member mentioned that in the specific case of interstate-caused fish advisories it may be appropriate for States to quantify the problem to the extent feasible, and to ask for EPA assistance in developing (and quantifying) interstate solutions, which single States could not solve.

The group expressed a preference for quantifying TMDLs where possible. For example, a concern was raised about the ability of EPA to defend a TMDL that is not quantified against litigation. However, there was some recognition that, in a variety of circumstances, it may not be possible or appropriate to quantify TMDLs. (This observation also arose during the discussion of multi-parameter TMDLs, issue 1(c)). There was a general feeling that it is preferable to quantify and to encourage quantification whenever possible but still allow States/EPA to move forward with TMDL development and implementation in the absence of quantified targets and/or other technical information if this would result in significantly more expeditious water quality improvement. However, the group expressed that in these instances greater review, and more of an iterative approach to implementation might be warranted.

This discussion led to the discussion of the hierarchy concept, reflected in the "Outline of Hierarchy or Matrix Approach" document, and in option #2c.

I.(c) - Stressor-specific: Should a TMDL always be stressor-specific (e.g. what should be done in situations where impairments are difficult to tie to a single stressor, such as habitat modification, instream flow)? If so, what are the

implications for implementing non-numeric water quality criteria and use designations? How, and to what extent should multiple parameter TMDLs be encouraged?

ISSUE DISCUSSION

The Water Quality Planning and Management regulation (40 CFR 130.7(c)(1)(ii)) states the following:

"TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards as identified pursuant to paragraph (b)(1) of this section. Calculations to establish TMDLs shall be subject to public review as defined in the State Continuous Planning Process."

Consistent with this regulation, TMDLs typically address a single pollutant or stressor. However, some impairments involve multiple pollutants, which may have additive or synergistic effects. Some narrative criteria could also apply to multiple parameters, i.e. the common narrative criterion "no toxics in toxic amounts." According to EPA's current approach, where multiple stressors are present, separate TMDLs are developed, although EPA encourages a coordinated effort to address all relevant problems in the waterbody (i.e., developing all needed TMDLs for the waterbody at the same time). For purposes of this discussion, multi-parameter TMDL could mean a set of TMDLs addressing more than one stressor in a single listed water.

OPTIONS:

1. Do not allow multi-parameter TMDLs. In cases where there is more than one impairment but the impairments are related, the State/Tribe could: develop a TMDL for the most dominant pollutant first, then evaluate if TMDLs are necessary for the remaining parameters; or undertake several TMDLs on the same waterbody simultaneously.
2. Allow multi-parameter TMDLs in certain instances:
 - a. When TMDLs developed for different pollutants/stressors are likely to involve the same sources and/or control actions (saves administrative resources for the agency and stakeholders);
 - b. When an impairment is due to multiple pollutants or stressors with synergistic effects (Note: currently, there may be few cases where the science is available to determine whether synergies are present).
3. Allow/encourage multi-parameter TMDLs in the context of the "hierarchy approach." Multi-parameter TMDLs may constitute a level (or different levels) of the TMDL "hierarchy." There may be different types of multi-parameter TMDLs, with different review requirements associated with each. [See "Outline of Hierarchy of Matrix Approach" draft document].

GENERAL DISCUSSION OF OPTIONS

The group indicated some support for the concept of multi-parameter TMDLs, identifying several reasons why they may be desirable:

- Sometimes solving one problem may exacerbate another, so it may make sense to focus on solving both problems simultaneously;
- Multiple pollutants sometimes can have more significant synergistic impacts than the cumulative (additional) impacts of individual pollutants, so addressing just one may not solve the problem; and
- Sometimes it may be more cost-effective to develop TMDLs for more than one parameter, both for entities that implement a TMDL as well as the regulatory agency that develops the TMDL.

The group recognized that there may be different types of multi-parameter TMDLs, which may be appropriate in different circumstances. Further, the group indicated some support for the notion of a "holistic" TMDL that offers a comprehensive approach to all impairments of the same waterbody. The group recognized that aspects of such "holistic" TMDLs may sometimes be difficult to quantify. (See issue 1.b.)

It became apparent that the concept of a TMDL hierarchy could help the group frame an approach to this issue as well as 1.b. Different approaches to multiple impairments, including multi-parameter TMDLs, may constitute different levels of the hierarchy. Multi-parameter TMDLs may be necessary in some instances, desirable in others, optional in still others; various approaches could require different (or additional) review and implementation requirements.

I.(d) - Sufficiency of approval procedure: What are the fundamental procedures, rules, or mechanisms by which TMDLs are approved to ensure statutory requirements (e.g., for margin of safety, seasonal variation) are fulfilled?

Section 303(d) of the Clean Water Act and EPA's Water Quality Planning and Management regulation (40 CFR 130.7(1)) state that TMDLs shall be established for listed waters at levels necessary to attain and maintain the applicable narrative and numerical WQS with seasonal variations and a margin of safety.

OPTIONS:

1. EPA gives great deference to States that commit to "conservative" assumptions in TMDL development: EPA provides guidance on the general procedure for establishing components of a TMDL, but EPA's review of individual TMDLs is not painstaking, giving States flexibility on specific aspects. For such flexibility, States would be required to develop

TMDLs conservatively, i.e. with respect to the TMDL's margin of safety, consideration for seasonal variation, and load allocations.

2. General approval procedure: EPA would provide this flexibility to States without requiring "conservative" assumptions.
3. Uniform, specific approval procedure: EPA provides more specific guidance or templates to States for establishing components of a TMDL, and TMDLs are reviewed carefully by EPA for consistency with this guidance.
4. Variable approval requirements: review and oversight requirements would be tailored to the nature of the TMDL submitted. For example, the level of review would be inversely proportional to the level of rigor (or quantification) contained in the TMDL (see draft "Outline of the Hierarchy or Matrix Approach").

GENERAL DISCUSSION OF OPTIONS

The group was advised by the facilitator that this question, while relevant to their discussions, is identical or very similar to an issue being addressed by the Management and Oversight Workgroup. There was some support for the notion that review and oversight requirements should be inversely proportional to the degree of rigor of the TMDL (although, as one workgroup member mentioned, EPA and States may not yet be sufficiently experienced with administration of the TMDL program to be in a position to judge when a given TMDL has a sufficiently high level of rigor). For example, if non-quantified TMDLs were allowed, more specific procedural requirements may be appropriate. There was also some support for the notion that TMDLs with site-specific quantitative endpoints (and non-quantified TMDLs, if they were possible) may require more intense review, to ensure public accountability that the TMDL would be sufficient to implement the water quality standard.

It was agreed that this issue would be referred to the Management and Oversight workgroup for inclusion in its deliberations.

1.e. Approval checklist: Should EPA establish a TMDL approval checklist? If so, what level of detail should it address? What specifically should it include? [overlap with Management and Oversight Workgroup]

ISSUE DISCUSSION

Checklists are generally for internal administrative ease in assuring that TMDL submissions are complete. They are not necessarily useful as evaluation guidance documents. A checklist for EPA and States to follow for administrative purposes could be helpful in clarifying what needs to be included in TMDL submissions to EPA. The FACA may wish to defer to EPA what the design or the content of a checklist should be.

OPTIONS:

1. Whether EPA develops a checklist for TMDLs should be an internal EPA-administrative decision.
2. EPA should develop an optional checklist which would be useful for the states, EPA and the public in reviewing TMDL files. The checklist could summarize TMDL requirements, and would serve as a quick reference for EPA or State staff performing reviews of TMDLs in years subsequent to the original review and approval. It could be a useful tool for members of the public to review basic information about the TMDL.
3. EPA should develop a mandatory checklist (for the same purpose as in Option 2).
4. EPA should not develop a TMDL checklist.

GENERAL DISCUSSION OF OPTIONS

After some discussion, the Workgroup indicated that there may be some utility in having a checklist which summarizes basic TMDL requirements. The group was unsure if such a checklist should be advisory or mandatory. The facilitator advised the Workgroup that the Management and Oversight Workgroup has discussed (and perhaps endorsed) the concept of a checklist, although it did not debate what the checklist might contain. The Workgroup requested that it review the results of the Management and Oversight Workgroup's discussions to date.

After reviewing the Management and Oversight Workgroup's materials, the Workgroup decided to delay discussion of the content of an approval checklist until it was more clear whether the Committee would recommend a checklist which would have any regulatory ramifications. If a the Committee recommends EPA using a checklist as the basis of approving TMDLs, the Workgroup may want to discuss what the components of such a checklist should be. Because the Criteria for Approval Workgroup's discussions focus on suggesting approval requirements, so determining the content of a checklist (if one is desired) will only be possible after the Workgroup concludes its discussions.

One Workgroup member pointed out that a mandatory checklist could prevent approaches which are innovative and/or go beyond the minimum required. It may be more appropriate to ask stakeholders in a given watershed "did you do everything you can to fix water quality" rather than "did you do everything on the checklist." Having a checklist may provide an argument for an entity not to do certain actions, which are not on the checklist, but which happen to be necessary to address the water quality impairment. However, another Workgroup member pointed out that from a source's perspective, certainty is important; i.e. it would be preferable to have requirements spelled out specifically at the outset. Others agreed that requirements for sources should be concrete (although they could be iterative).

1.i. TMDLs where no point sources exist: should there be any different or additional requirements (or approval criteria) for water quality impairments without point sources? If so, how would involving only non-point sources differ? Are there any other special types of TMDLs that might require different or

additional requirements or approval criteria? What would these be?

OPTIONS:

1. TMDLs will be developed with no differentiation based on the causes of pollution. Whatever criteria for approval are developed will apply uniformly.
2. TMDLs where no point sources exist will differ from TMDLs with point sources. Nonpoint source-only TMDLs will consist of load allocation determinations as appropriate along stream reaches, lakes or other waterbodies; will include plans reasonably assuring improvement in water quality; will have checkpoints to evaluate whether the plans for improvement are working or not, will require that the plans be updated to increase improvement efforts if appropriate. No reasonable assurance will have to be made in the initial TMDL that water quality standards will be met by a specific date (but the TMDL will be pursued until standards are attained).
3. TMDLs where no point sources exist will contain the following elements (as outlined in a draft prepared by the State of Oregon, faxed to the Workgroup on 3/25):
 - A. Condition Assessment and Problem Description
 - B. Goals and Objectives
 - C. Proposed Management Measures
 - D. Timeline for Implementation
 - E. Identification of Responsible Participants
 - F. Reasonable Assurance of Implementation
 - G. Monitoring and Evaluation
 - H. Public Involvement
 - I. Maintenance of Effort Over Time
 - J. Discussion of Costs and Resources

[Note: this option contains a more specific process than Option (2)].

OPTION DISCUSSION

Workgroup members observed that this option reflected the notion that if there is less specificity (quantification) in setting maximum loads, for example when there are no numeric but only narrative criteria, there may be a need for more specificity in terms of process requirements to provide assurance that a TMDL will meet its objective of attaining water quality standards. There also were two specific suggestions: (1) there needed to be a feedback loop between items B. and C.; and (2) item G. (Monitoring and Evaluation) must be accompanied by a process for making revisions to A-D, to underscore the iterative nature of the process.

4. There may be circumstances when other activities that address water quality impairments due entirely to non-point sources may be approvable as TMDLs:

Sub-options (not necessarily mutually exclusive):

- a. Plans adopted for the protection of water quality by the US Forest Service, BLM or other federal agency, which contain sufficient documentation to demonstrate that they will attain water quality standards and which contain enforceable implementation mechanisms, can be submitted on federally managed lands for TMDLs where no point sources exist.
- b. States which have enforceable Forest Practices Acts or enforceable Agricultural Management Plan statutes directed at protecting water quality and attaining water quality standards, may submit plans created under those statutes as TMDLs where no point sources exist.
- c. A TMDL will be considered developed for an impaired water if it is covered by a process with similar objectives to a TMDL (i.e., waters covered by national estuary programs, interstate basin plans, Forest Management Plans or Agricultural Management Plans directed at protecting water quality and attaining water quality standards).

OPTION DISCUSSION

Several members of the Workgroup expressed a belief that a program could not substitute for a TMDL. In other words, each TMDL must meet the specific process requirements (there should not be any automatic approval of all Forest Plans, National Estuary Plans, etc). However, after some discussion there was support for the suggestion that who does the TMDL should not be an approval criteria (e.g., the State environmental agency submits the TMDL, but a federal agency, State agency (or even private parties) can prepare it as long as it meets all approval criteria.

- d. TMDLs where no point sources exist will differ from other TMDLs only in the length of time allowed for attaining water standards. Time allowed prior to attainment of standards may be much longer. This should depend upon the direct relationship of physical changes proposed where growth time for plantings or similar activities takes time, or where the exact outcome of the effort cannot be known until a practice has been in place for some period of time.
- e. TMDLs which deal with non-point sources of pollution stemming from "legacy" problems will be prepared in a different manner from other TMDLs. They will recognize the degree of limitation caused by the legacy problem and will be required to consider limiting future use of the natural resource area as an alternative to other mitigation steps which may be needed to remove or alter the legacy problem.

³"Legacy" problems may be loosely defined as problems due primarily to activities that took place in the past, such as past loading of currently banned substances, or past structural modifications such as channelization or dam construction.

GENERAL DISCUSSION OF OPTIONS

The workgroup noted that these options all included an implementation component. This reflected the Workgroup's belief that implementation is essential for a successful TMDL program (see discussion of issue 5.a., implementation assurances). Perhaps because the Workgroup discussed this issue several weeks prior to discussing implementation, it did not attempt to reach consensus on which of the above options might be preferable.

However, there was some discussion of the many different types of "legacy" problems such as changing land use patterns, loss of shade trees, dams, channelization, etc. Some were concerned with the feasibility of States addressing certain legacy problems (such as dam removal) which prompted discussion of the need to involve all authorities (in addition to State authorities) in TMDL development and implementation. The workgroup recognized that there are different types of "legacy" problems, and agreed to add a new issue to issue area 2 (Special Types of TMDLs/Specific TMDL issues):

2(d): Legacy problems: How might a TMDL address impairments caused by different types of "legacy" problems (e.g., dams, channelization, historic land uses, riparian zone alteration, contaminated bottom sediments, contaminated fish flesh, historic water rights and water supply draw-downs?) Should TMDLs for "legacy" pollutants differ in any way?

ISSUE AREA 5. IMPLEMENTATION

5a. Implementation requirements/assurances: What, if any, implementation assurances can/should be required for a TMDL to be approvable?

ISSUE DISCUSSION The options below address whether and how to ensure that implementation is carried out. The full range of what measures, mechanisms, and/or assurances of implementation are acceptable (the second part of the question above) are not presented here (see issue 5.d).

The ultimate purpose of a TMDL is to bring about attainment of applicable water quality standards. The Clean Water Act provides that TMDLs "shall be established at a level necessary to implement the applicable water quality standards...." CWA § 303(d)(1)(C) (emphasis added). The goals of the Clean Water Act will be thwarted, and resources wasted, if the TMDL is not implemented.

Issuance of a regulation mandating that implementation requirements and assurances be part of the TMDL itself is appropriate under the CWA. Absent inclusion of implementation as a component of a TMDL, some level of implementation may be assurable through a State's Continuing Planning Process ("CPP"); whatever the TMDL ultimately consists of must be incorporated into a state's CPP. And indeed, in 1994, EPA prepared draft guidance that would have required that a TMDL include an implementation schedule in order to be approvable. That 1994 guidance was never issued.

However, it is important to note that a requirement to have implementation be part of the TMDL does not imply that it is mandatory for the implementation mechanisms be regulatory in nature, as Section 303(d) does not provide any new regulatory authorities. In particular, existence of a TMDL does not mandate that a State develop regulations on nonpoint sources.

OPTIONS:

1. Require a TMDL to contain an implementation component in order to be approvable. Issue regulations that include the following requirements:

First, implementation is a necessary component of a TMDL, required for approval. The implementation component shall require submittal of an Implementation Schedule with defined requirements, including those set forth below, as part of the TMDL.

Second, define the Implementation Schedule to include, among other things:

- a detailed description of the control actions (for all affected point and/or nonpoint sources as appropriate);
- a schedule for implementing those actions;
- the authorities under which those actions are to be carried out and whether those actions are enforceable (see below section on "reasonable assurances for nonenforceable controls for nonpoint sources);
- a monitoring plan to determine the effectiveness of the implementing actions;
- an estimate of the time required to attain applicable water quality standards and measurable milestones;
- the ramifications of failing to meet these milestones; and
- a schedule for revising (and submitting to EPA for approval) the state's CPP and applicable (preferably sub-basin) Water Quality Management Plans to include the TMDL, and the proposed Water Quality Management Plan sub-basin revision.

If certain actions necessary for implementing a TMDL are not enforceable, (some nonpoint source controls), the Implementation Schedule shall provide "reasonable assurances" that the allocations identified in the TMDL will be achieved. This could include such things as:

- reasonable assurance of the availability of funds to implement the nonenforceable actions;
- a description of the process for entering into any necessary agreements (such as with private landowners) to carry out such nonenforceable actions; and
- a description of the probability of success in entering into such agreements and carrying out the nonenforceable actions.

⁴ The Workgroup noted that the question of nonenforceability of nonpoint source controls is complex. Examples of enforceable nonpoint source controls include CZARA management measures and . 319

management measures in some States, and State and local laws governing certain forestry, agriculture, and growth management practices. The Workgroup also noted that other federal agencies are required to comply with the Clean Water Act, and that, accordingly, nonpoint source controls could be enforceable components of programs operated by these agencies.

⁵Options 1-3 might include EPA's preparation of guidance outlining what actions it would deem as necessary and desirable for ensuring implementation of a TMDL, particularly with respect to nonpoint source controls, and what will satisfy the "reasonable assurances" requirements.

2. Require implementation, but as part of the State's CPP, not as a component of the TMDL. Issue regulations that include the following requirements:

First, a TMDL must contain:

- a schedule for revising applicable NPDES permits;
- a schedule for revising and submitting to EPA for approval the state's CPP to include an Implementation Schedule (as defined in option 1);
- a schedule for revising applicable (preferably sub-basin) Water Quality Management Plans to include the implementation Schedule;
- a binding and enforceable commitment by the State to abide by these schedules; and
- the proposed Water Quality Management Plan (preferably sub-basin) revision.

As with Option 1, the TMDL must also include "reasonable assurances" that the load allocations for nonpoint sources identified in the TMDL will be achieved.

Second, define the Implementation Schedule as in Option 1 above.

Third, specifically provide that a State's permitting authority under CWA § 402 shall be suspended if the CPP is not revised and submitted to EPA for approval within a specified (and limited) amount of time from the date identified in the TMDL for submitting a revised CPP to EPA for approval. See § 303(e)(2).

OPTION DISCUSSION

The Workgroup agreed that the revocation of NPDES permitting authority under § 402 might be a strong incentive for many States to follow through on including implementation measures in their CPP and water quality planning activities; however, some questioned the likelihood that this "stick" would ever be used. The Workgroup acknowledged that this option would raise the visibility and importance of the States' CPP and water quality planning processes. However, the Workgroup questioned whether the CPP in many States would be sufficient to guide TMDL implementation. There was no discussion of other incentives (besides the revocation of NPDES permitting authority), such as grants, penalties, watch lists, etc., to induce States to revise their CPP to ensure TMDL implementation.

3. Same as Option 2 without amending the regulations to include a timeline for suspending permitting authority under § 402.
4. Require some implementation provisions to be part of the TMDL (and necessary for approval), and allow others to be outside of the TMDL, but included in the State's WQMP and CPP [this option was not discussed in detail; the Workgroup did not suggest which aspects should be part of the TMDL, and which should not].
5. EPA requires implementation of point source allocations, but allows States to decide whether implementation of nonpoint source controls is voluntary or enforceable.

GENERAL DISCUSSION OF OPTIONS

The Workgroup mainly focused on options #1 (implementation as a component of the TMDL) and #2 (implementation ensured through State CPP and water quality planning processes). From the outset, the Workgroup felt that implementation is an essential outcome of the TMDL development process. The Workgroup reached a consensus favoring Option #1, that implementation could be better assured if it were a component of the TMDL (it should be noted, however, that one member abstained, and two members were absent from the teleconference where this consensus was identified).

The Workgroup believes that requiring implementation provisions as part of the TMDL is proper and appropriate under the CWA. While the Workgroup felt that at a minimum implementation should be included in the State's CPP, the Workgroup does not believe the CPP and water quality management planning activities in some states are sufficient to ensure implementation. The Workgroup felt that an implementation requirement would help bring about more equity among different types of sources that contribute to water quality impairments. Several Workgroup members stated that there also are administrative and policy reasons for requiring implementation as part of a TMDL (rather than only requiring implementation to be part of a State's water quality management planning process or CPP). One Workgroup member noted that State CPPs could, in general, be made more "robust." The member noted that a CPP has additional value (besides reflecting implementation components of a TMDL), and it may be worthwhile (as a separate exercise) for States and EPA and States might wish to develop the concept and content of a CPP more fully.

⁶ It should be noted that if implementation is required as a component of a TMDL, it would also become part of a State's CPP and water quality management planning processes, pursuant to CWA § 303(d)(2).

While the Workgroup strongly endorses making implementation a required component of the TMDL, some concerns were raised about States having adequate resources and regulatory authority to ensure implementation. In addition, the Workgroup recognized a potential legal/administrative problem for EPA under any option where implementation was required. If it becomes necessary for EPA, rather than a State or Tribe, to develop a TMDL, it may be difficult for EPA to ensure that it would be implemented in situations where EPA lacks implementation authority for nonpoint source controls. Under some scenarios EPA may be put in the awkward position of having to develop TMDLs that could fail to meet its own approval criteria. Given this, EPA's ability or willingness to disapprove TMDLs for failure to provide for adequate implementation might be compromised. The Workgroup suggested that there may be regulatory solutions to this problem, but did not discuss them. One member suggested that questions of regulatory authority might best be

addressed by examining a broader range of EPA policy choices and potential incentives EPA might give to States. For example (analogous to State Implementation Plans under the Clean Air Act), a threat that a federal implementation plan might be written could exert pressure on States to develop implementation plans themselves. The Workgroup also felt that EPA should explore implementation authorities more fully. [Note: the Workgroup did not identify or discuss the full range of implementation mechanisms; this will be addressed under issue 5.d].

The Workgroup briefly discussed how the "hierarchy approach" may address the question of implementation "enforceability." For TMDLs where less enforceable controls are available, more follow-up (such as evaluation, re-assessment of controls, and overall EPA oversight) should be required.

5.b. Phased TMDL follow-through: What provisions (if any) should a phased TMDL contain to ensure that future phases (such as evaluation and fine-tuning) occur?

ISSUE DISCUSSION As indicated by the Reinvention Workgroup in their Final Report from Don Brady, a phased approach and dynamic timeframe may be appropriate to address situations of relatively high uncertainty. This supports EPA's existing "phased approach" to TMDL development, outlined in the 1991 Guidance Document "Guidance for Water-Quality Based Decisions-the TMDL Process". As outlined in this document, a TMDL developed using the phased approach contains all required TMDL elements and establishes a schedule for installation and evaluation of point and nonpoint control measures, data collection, and assessment of water quality standards attainment. The phased approach allows TMDLs to be developed without waiting for extensive data to be collected and analyzed; it provides a mechanism for verifying expected load reductions, evaluating effectiveness of control measures, and determining whether a TMDL needs to be revised.

Such situations include TMDLs developed where information is limited, or TMDLs which rely on the use of much best professional judgement. Often, such TMDLs involve non-chemical stressors and nonpoint sources.

OPTIONS:

1. Commitment to specific actions within time frames: The phased TMDL would contain a list of specific actions (including collection of additional information to evaluate the TMDL) which would be undertaken within specified timeframes. These commitments could be tracked and included in future State/EPA workplans or agreements.

OPTION DISCUSSION This reflects the least flexible approach to phased TMDL implementation.

2. Commitment to review at a specified future date.

3. Commitment to review specific items at a specified future date.
4. Commitment to review at an unspecified future date: The TMDL would indicate the need to undertake the evaluation at a future time without a specific commitment to actually complete the follow-up data/information collection.

OPTION DISCUSSION This approach would have great flexibility and not contain a prior commitment by the State to any follow-up activity.

GENERAL DISCUSSION OF OPTIONS

The above options reflect a continuum of flexibility for States in regard to timeframes for following up on a TMDL developed using the phased approach.

The Workgroup felt that the hierarchy approach may address this issue, and tentatively agreed to examine it in that context. The amount and type of follow-up activity may depend upon the type of TMDL, i.e., the level it is at on the hierarchy or the extent to which uncertainty is present. For example, to be approvable, a non-quantified TMDL may require more specific commitments from the State for follow-up activities, such as future data collection, evaluation, and potential revision.

Total Maximum Daily Load (TMDL) Program

DRAFT 5/19/97

REVISED - 5/19/97 OUTLINE OF "HIERARCHY" or "MATRIX" APPROACH TO TMDL APPROVAL (WITH EXAMPLES)

Introduction

The following proposal addresses the fundamental problem of TMDL approval, that different aspects of TMDLs vary in the degree to which they can be rigorously quantified. This variability applies to different types of TMDLs, different types of problems that TMDLs seek to address, and pollution from different types of sources. Moreover, there may be differences in the degree to which separate components of the TMDL process require or are amenable to quantification, including the degree to which use impairment can be attributed to a particular pollutant or other type of pollution, the degree to which water quality conditions deviate from a water quality standard or other desired norm, the degree to which the deviation can be attributed to specific sources or categories of sources, the degree to which a precise "load allocation" can be assigned to individual sources, and the degree to which such load allocations can be correlated with specific remedial measures. Similar issues apply to the degree of subsequent monitoring and follow-up actions required, as well as the level of required EPA oversight.

The following proposal suggests the same basic "hierarchy" approach to each type of variability. The degree of quantitative rigor that is possible should not be viewed as an absolute (all-or-nothing) determination. If the highest level of quantitative rigor is not possible, an intermediate level of rigor should be considered (the "next-best" approach). At the same time, there is a logical relationship between the degree of rigor possible in the early phases of the TMDL process and the degree of rigor required in the subsequent monitoring, revision and follow-up phases of the process (the concept of inverse proportionality). When types of TMDLs and TMDL components are amenable to quantification with a high degree of certainty, the need for supplemental or related implementation rigor is relatively low. By contrast, when the type of TMDL and TMDL component is not amenable to precise quantification, or when that quantification is subject to considerable uncertainty, the degree of rigor associated with supplemental or associated implementation measures increases.

The hierarchy approach, in turn, suggests that the TMDL approval and revision process be divided into a series of related steps.¹ Issues involving approval

procedures will be identified and addressed separately.

¹ I believe that this organization includes most of the issues identified in the Criteria for TMDL Approval Reorganized Issue List (Draft 3/20/97).

Step 1 - Target Identification. Identification of the pollutant or other type of pollution, and quantification of the target (or desired end-point") of the TMDL process.

Step 2 - Identification of Variance from Target. Quantification of the degree to which conditions in the water body deviate from the desired target or end-point.

Step 3 - Source Identification. Identification of the responsible sources or categories of sources of pollution, and the degree to which each source (or category of source) contributes to the problem.

Step 4 - Pollution Reduction Allocation. Allocation of pollution reduction responsibilities among the identified sources and other factors, including wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources or categories of nonpoint sources, the statutorily-prescribed margin of safety (MOS), and any allocation for future growth, potentially with seasonal variations or other factors to address variable flow conditions.

Step 5 - Identification of Implementation Methods. Specification and quantification of the implementation tools and methods that will be used to achieve the prescribed allocations.

Step 6 - Monitoring and Assessment of Effectiveness. Monitoring and assessment to determine the degree of use attainment, remaining variance from the target, degree of compliance with implementation methods, verification of pollution source identification and potentially identification of additional sources or categories of sources.

Step 7 - TMDL Revision (if necessary). Where necessary, in response to step 6, revision as appropriate of the applicable pollution reduction allocations and implementation methods.

[Continue steps 6 and 7 until use impairment is eliminated (target is achieved).]

Suggestions for how this hierarchy approach might be applied to each issue, along with some examples where needed for purposes of clarification, are given below. After the workgroup discusses and revises this organization of issues and TMDL steps, along with the application of the hierarchy concept to each step, it should be possible to combine them into a matrix format that could be used to determine which elements should be included in individual TMDLs.

Step 1 -- Target Identification

Proposed rigor hierarchy and associated proportionality requirements:

1. When the impairment can be tied to a specific pollutant with an existing numeric criterion, that pollutant and that criterion should be used to develop the TMDL. Use of an existing numeric criterion should be presumed to be adequate, so long as subsequent monitoring verifies post-implementation compliance with the criterion and elimination of the use impairment.

Example: Toxicity to fish is found to be caused by residual chlorine from disinfection, and a specific numeric criterion for chlorine is included in the WQS.

2. When the impairment can be tied to a specific pollutant *without* an existing numeric criterion, a criterion should be developed wherever possible (either state-wide or on a site-specific basis) and used to develop the TMDL. Use of a new numeric criterion should require additional post-implementation verification that the new criterion is adequate to address the problem. If not, a procedure should be in place to modify the criterion and to impose additional remedial measures to meet the new criterion.

Example: Toxicity to fish is found to be caused by residual chlorine from disinfection, but no specific numeric criterion for chlorine is included in the WQS. The state should develop a chlorine WQC, or a site-specific criterion for chlorine.

3. When the impairment is tied to a pollutant for which a numeric criterion is not possible, or where the impairment is identified but cannot be attributed to a single traditional "pollutant", the state should try to identify another (surrogate) environmental indicator that can be used to develop a quantified TMDL, using numeric analytical techniques where they are available, and best professional judgment where they are not. Use of a surrogate environmental parameter should require additional post-implementation verification that attainment of the surrogate parameter results in elimination of the impairment. If not, a procedure should be in place to modify the surrogate parameter or to select a different or additional surrogate parameter and to impose additional remedial measures to eliminate the impairment.

Example: A stream suffers from elevated temperature that cannot be traced to thermal discharges. The divergence from the numeric temperature criterion (ΔT) is useful to quantify the divergence from the WQS, but is not useful in developing restoration strategies. Instead, the state determines that healthy streams of similar types are characterized by X percent more stream side cover vegetation. This differential is established as the numeric goal of the TMDL.

4. When impairment cannot be tied to either a specific pollutant or to a surrogate environmental parameter, the state should try to identify a quantifiable set of remedial measures that it believes, using numeric analytical techniques when they are available or best professional judgment when they are not, are likely to eliminate the impairment. Use of a numeric standard based on implementation of specified remedial measures should require additional post-implementation verification that attainment of the measures results in elimination of the impairment. If not, a procedure should be in place to modify the measures or to select and to impose different or additional measures to eliminate the impairment.

Example: A stream suffers from excess sedimentation, but because the total annual sediment load is less important than peak loads during certain critical storm events and seasons, it is not possible or useful to establish a TMDL based on total sediment load reductions. Instead, the state identifies the percent of the streambank that needs to be stabilized and revegetated in order to eliminate the impairment.

5. When the impairment can be tied to multiple pollutants, the state should either: (a) establish a multi-parameter TMDL that accounts for any additive or synergistic effects; (b) determine which of the pollutants is most dominant or limiting under the circumstances, and develop the TMDL based on that pollutant; or (c) identify an indicator pollutant that can be used to define the numeric goals of the TMDL. Use of a multiple parameter, indicator pollutant or dominant pollutant criterion should require additional post-implementation verification that the criterion is adequate to address the problem. If not, a procedure should be in place to modify the criterion and to impose additional remedial measures to meet the new criterion.

Example: A lake is eutrophying due to loads of nitrogen, phosphorus, or both. The state could either: (a) establish a trophic status index based on the multiple pollutants; (b) conduct a study that indicates that nitrogen is the limiting pollutant and establish a TMDL based on that pollutant; or (c) establish a TMDL based on an indicator of harm such as chlorophyll A levels.

Step 2 -- Identification of Variance from Target

Proposed rigor hierarchy and associated proportionality requirements:

1. Where existing monitoring data are sufficient to quantify the degree to which conditions in the water body deviate from the target identified in Step 1, that degree of variance should be used to establish pollution reduction allocations (Step 4). Where deviation from the target is variable (as is likely in most cases), a conservative variance level should be used to establish pollution reduction targets. An overall pollution reduction target based on adequate existing data should be presumed sufficient, subject to subsequent verification of compliance with the target and use attainment.

Example: Existing data show that the water body has dissolved oxygen levels that range from 3.0 to 4.0 mg/L, compared to a WQS of 5.0 mg/L. The degree of variance from the standard should be 2.0 mg/L.

2. Where existing monitoring data are not sufficient to quantify the degree to which conditions in the water body deviate from the target identified in Step 1, additional monitoring should be conducted wherever technically feasible in order to establish the necessary pollution reduction targets. An overall pollution reduction target based on adequate new data should be presumed sufficient, subject to subsequent verification of compliance with the target and use attainment.

Example: Same as above using newly-collected data.

3. Where it is not technically feasible to collect monitoring data adequate to quantify the existing deviation from the target, or where the target chosen is not amenable to such quantification, best professional judgment or indirect methods should be used to estimate the degree to which the water body deviates from the target. In such cases, additional monitoring will be needed to confirm the adequacy of the surrogate targets chosen, with revisions as necessary to eliminate use impairment.

Example 1: Fish in the water body experience sublethal adverse effects (such as tumors or developmental abnormalities) due to levels of toxicants below the level of analytical detection in the water body, but identified through fish tissue assays or other indirect methods as likely to exceed established WQC. Fish tissue levels, along with assumed bioconcentration levels and other values, should be used to estimate the necessary percentage reductions in discharges of those toxics. Subsequent fish tissue assays as well as continued assessment of the sublethal impacts will be needed to ascertain the adequacy of the estimated target load reductions.

Example 2: Spawning beds are impaired due to excess deposition of fine sediments, but it is not possible to monitor fine sediment runoff levels precisely, or to estimate the load reductions necessary to restore the spawning beds. Instead, stream bank restoration and logging road stabilization projects will be undertaken in an effort to reduce sediment loads. Best professional judgment should be used to estimate the necessary number of miles of stream banks and roads that must be restored or stabilized. Subsequent monitoring and assessment of spawning habitat and success will be needed to ascertain the adequacy of the restoration and stabilization targets.

Step 3 - Source Identification.

Proposed rigor hierarchy and associated proportionality requirements:

1. When the target violation or use impairment is known to be caused exclusively by one or more known sources, and adequate existing data are available to quantify the percentage of pollution caused by those sources, pollution reduction allocations can be made based on that information. In such cases, it should be presumed that pollution reductions by those sources will be adequate to attain the target and eliminate use impairment. If additional pollution sources are found, either (a) additional pollution reductions can be required from those sources to provide an additional margin of safety and equity among sources; (b) potential pollution reductions from those sources can be identified and implemented if the initial scheduled reductions are inadequate to attain the target and eliminate use impairment; or (c) the existing allocations can be modified to account for the new expected pollution reductions so long as total projected reductions remain adequate to meet the target.

Example: Excess nitrogen loads to a river are known to be caused by discharges from two factories and two sewage treatment plants, and accurate data are available on the total mass

of nitrogen coming from each source.

2. When some pollution sources are known, and existing data are available to quantify the percentage of pollution caused by those sources, but it is known or expected that additional pollution sources exist, additional monitoring and source identification should be conducted to identify the remaining sources. If such sources can be identified readily and quickly, pollution reduction allocations can be made based on that information. In such cases, it should be presumed that pollution reductions by those sources will be adequate to attain the target and eliminate use impairment. If not all sources and source contributions can be identified quickly, preliminary pollution reduction allocations adequate to meet the target and eliminate use impairment should be made based on existing information. If additional pollution sources are found, either (a) additional pollution reductions can be required from those sources to provide an additional margin of safety and equity among sources; (b) potential pollution reductions from those sources can be identified and implemented if the initial scheduled reductions are inadequate to attain the target and eliminate use impairment; or (c) the existing allocations can be modified to account for the new expected pollution reductions so long as total projected reductions remain adequate to meet the target.

Example: Same as above, but it is expected that additional nitrogen loadings derive from sanitary sewer overflow points. Additional monitoring and investigation could determine the location of such discharge points, along with appropriate remediation strategies.

3. If the responsible pollution sources are known, but inadequate data exist to quantify the amount of pollution caused by each source or category of source, additional monitoring should be conducted, where technically feasible, to quantify pollution contributions. Pollution reduction allocations should be made based on that new information, subject to later verification of target attainment and elimination of use impairment.

Example: Same as above, but additional, unknown concentrations of nitrogen are being released by small, package treatment plants for which extensive monitoring has not been performed. Additional monitoring should be able to identify these additional loadings quickly and with relative certainty.

4. If the responsible pollution sources are known, but it is infeasible or impossible to quantify the amount of pollution caused by each source or category of source with precision, estimated pollution contributions should be determined based on best professional judgment, and pollution reduction allocations should be made based on those estimates. Such estimates should be subject to more detailed ambient monitoring to determine the effectiveness of pollution controls in reducing ambient pollution, along with verification of target attainment and elimination of use impairment.

Example: Same as above, but it is expected that additional nitrogen derives from runoff from known areas of row crop agriculture. While it may not be feasible to conduct accurate "edge-of-field" monitoring to quantify such additional loadings precisely, information on crop mixtures, acreage, fertilizer

application rates and methods, soil types, slopes, hydrologic data, etc., can be used to estimate additional total loadings from these sources.

5. If it is infeasible or impossible to identify individual pollution sources with precision, best professional judgment should be used to identify the sources or categories of sources that are most likely to be responsible for the pollution, based on information about existing land use or management practices. Estimated pollution reduction allocations should be made based on such judgments. Such estimates should be subject to more detailed ambient monitoring to determine the effectiveness of pollution controls in reducing ambient pollution, along with verification of target attainment and elimination of use impairment.

Example: Same as above, but it is expected that additional nitrogen loadings derive from runoff from suburban lawns, parks, golf courses, etc. Based on the percentage of surface area characterized by such uses, and information on typical fertilizer application rates, etc., rough estimates can be made of total loadings from these sources.

Step 4 - Pollution Reduction Allocation.

Proposed rigor hierarchy and associated proportionality requirements:

CAUTION: The following application of the hierarchy concept may not be entirely appropriate, because alternative approaches to pollution reduction allocations may reflect legitimate differences in regulatory philosophy. For example, one state might believe that it is most appropriate to favor older over newer sources in allocating incremental pollution reductions; another might favor a purely pro rata approach based on equal pollution reduction percentages; while another might favor equalizing the total or incremental costs of pollution reduction among sources.

1. If data exist to identify the cost, technical feasibility, and other factors relevant to pollution reduction allocation decisions for all sources, such information should be used to make allocation decisions. If this information is known with relative certainty, it should be presumed that the resulting allocations will be effective, subject to verification of target attainment and elimination of use impairment.

Example: For the sewage treatment plants discussed above, the cost and efficacy of additional nitrogen controls is known with relative certainty, and can be used to determine potential incremental reductions from those sources.

2. If information on cost, technical feasibility and other factors relevant to pollution allocation decisions is known with less certainty, additional monitoring and assessment will be needed to verify the efficacy of the pollution reduction strategies chosen, as well as verification of target attainment and elimination of use impairment.

Example: With respect to the SSOs mentioned above, some information is available on the strategies chosen to reduce or eliminate SSO discharges, such as water conservation, rerouting of flows within the sewer system, etc. However, the

effectiveness of the chosen controls cannot be known with certainty absent implementation and follow-up analysis, with additional measures added if necessary to correct remaining problems.

3. If information on cost, technical feasibility and other factors relevant to pollution allocation decisions is not known, such information should be collected and analyzed where it is possible to do so expeditiously and effectively, and such information should be used as the basis for allocation decisions.

Example: With respect to the industrial sources mentioned above, additional engineering studies are needed to determine the costs and means available to reduce nitrogen discharges further from those sources.

4. If information on cost, technical feasibility and other factors relevant to pollution allocation decisions cannot be collected and analyzed expeditiously and effectively, allocation decisions should be made based on best professional judgment regarding the cost and technical feasibility of alternative pollution reduction strategies. More detailed follow-up monitoring and assessment will be needed to verify the efficacy of the pollution reduction strategies chosen, as well as verification of target attainment and elimination of use impairment.

Example: With respect to the row crop runoff discussed above, only general information is available on the effectiveness in reducing nitrogen loadings of best management practices such as soil testing, timing of fertilizer application, etc. While less precise than for point sources, such estimates can be used to establish initial load reduction allocations, subject to follow-up monitoring and evaluation.

5. If the cost and technical feasibility of pollution reduction strategies cannot be estimated based on best professional judgment, another method must be chosen on which to base allocation decisions, such as equal percentage reduction by all sources, equal incremental reduction by all sources, etc. (technology-forcing). More detailed follow-up monitoring and assessment will be needed to verify whether the assigned pollution reductions are achieved, as well as verification of target attainment and elimination of use impairment.

Example: No technology is currently known to be available to reduce discharges of a toxic pollutant from three facilities in a particular industry, but it is known that such reductions are necessary to meet the WQS and to eliminate use impairment. Load reduction allocations are made on a pro rata basis (such as 30 percent reduction per plant), with a 3-year compliance schedule in the revised NPDES permits. The dischargers must find ways to comply with the new permit limits through research and development in new pollution prevention or pollution control methods.

Step 5 - Identification of Implementation Methods.

Proposed rigor hierarchy and associated proportionality requirements

1. For waters where impairment is limited to or dominated by point sources, and where specific numeric criteria are available and amenable to the calculation of WLAs that can be included in new or revised NPDES permits, implementation should be fairly straightforward, and should include: specific timetables and commitments to issue or revise the permits with fixed compliance schedules, monitoring and enforcement commitments, ambient monitoring to determine whether achievement of the WLAs results in attainment of the WQS, and a feedback loop requiring revised WLAs, permits, etc. if the WLAs turn out to be inadequate.
2. For waters where impairment includes significant or dominant nonpoint source contributions, implementation provisions will need to be more rigorous and iterative. Nonpoint source implementation provisions should include the identification of specific BMPs and other measures designed to achieve the necessary LAs, including identification of the specific practices that will be employed, by whom, where, and by when, and with what implementation or enforcement requirements and assurances (such as permits, contracts, cross-compliance requirements, plan approvals, etc.). Additional monitoring and assessment will require ambient monitoring to determine the effect of the practices on water quality and related conditions; compliance assessment to determine the degree to which the selected practices are implemented; and to the extent possible, assessments of the efficacy and impacts of the practices chosen. Based on this monitoring and assessment program, the TMDL should include a specific timetable and process for evaluation of whether additional practices must be employed, by whom, where, and by when, in order to eliminate the remaining impairment.
3. For waters where remedies involve restoration strategies to address "legacy pollutants," habitat impairment (such as channelization or loss of riparian cover), water withdrawals, pollution "trading," or other special issues, implementation provisions will need to be different but similar to those suggested for nonpoint sources. For example:
 - a. For waters where it is believed that use impairment can be reduced or eliminated through habitat restoration projects, implementation provisions should include identification of the specific restoration projects that will be undertaken, by whom, where, and by when, and what implementation provisions are included to provide assurance that the projects will be completed (funding, assignment of responsibility, where applicable enforcement and compliance provisions, etc.). Additional monitoring and assessment will require ambient monitoring to determine the effect of the restoration projects on water quality and related conditions; compliance assessment to determine the degree to which the selected projects are implemented; and to the extent possible, assessments of the efficacy and impacts of the projects chosen. Based on this monitoring and assessment program, the TMDL should include a specific timetable and process for evaluation of whether additional projects or practices must be employed, by whom, where, and by when, in order to eliminate the remaining impairment.
 - b. For waters where it is believed that use impairment can be reduced or eliminated through elimination or mitigation of

legacy pollution, implementation provisions should include identification of the specific remediation projects that will be undertaken, by whom, where, and by when, and what implementation provisions are included to provide assurance that the projects will be completed (funding, assignment of responsibility, where applicable enforcement and compliance provisions, etc.).

- c. For waters where it is believed that use impairment can be reduced or eliminated through practices to increase instream flows, implementation provisions should include identification of the specific water conservation, withdrawal timing, or other projects that will be undertaken, by whom, where, and by when, and what implementation provisions are included to provide assurance that the projects will be completed (funding, assignment of responsibility, where applicable enforcement and compliance provisions, etc.).
- d. For waters where it is believed that use impairment can be reduced or eliminated through pollution reduction trading, or where it is believed that the same result can be achieved at lower costs through trading, implementation provisions should include identification of the specific trading provisions and "rules" that will be employed, by whom, where, and by when, and what implementation provisions are included to provide assurance that the traded pollution reductions will be achieved, and for comparable forms of pollution with comparable impacts (funding, assignment of responsibility, enforcement and compliance provisions, etc.).

In all of these cases, additional monitoring and assessment will be required to determine the effect of the restoration, conservation, remediation, trading or similar projects on water quality and related conditions; compliance assessment to determine the degree to which the selected projects are implemented; and to the extent possible, assessments of the efficacy and impacts of the projects chosen. Based on this monitoring and assessment program, the TMDL should include a specific timetable and process for evaluation of whether additional projects or practices must be employed, by whom, where, and by when, in order to eliminate the remaining impairment.

6 - Monitoring and Assessment of Effectiveness.

The degree of follow-up monitoring and assessment depends on the relative degree of rigor and precision obtained in Steps 1 - 5. To avoid duplication, and because the author is getting weary of this exercise, the specific weaknesses in earlier steps that trigger heightened monitoring and assessment requirements will not be repeated here. (May be added at a later date).

Step 7 - TMDL Revision (if necessary).

Same as Step 6, but with respect to the requisite need for TMDL revisions if follow-up monitoring and assessment indicates that the initial application of Steps 1 - 5 was not adequate to attain the target and to eliminate use impairment.

- **Sufficiency of Approval Procedures**

Proposed rigor hierarchy and associated proportionality requirements

1. EPA defines specific procedures for preparation of TMDLs. If the State adopts those criteria and agrees to apply them, EPA should approve the procedures initially to ensure that they comply with the EPA guidelines. Then, EPA oversight over individual TMDLs can be less rigorous.
 2. The State might adopt the specific EPA procedures and apply them to most TMDLs, which will receive less EPA oversight. However, the State might deviate from those procedures for complex TMDLs or other TMDLs that require different treatment. Such cases will be targeted for increased EPA review.
 3. If the State adopts standard procedures that differ from those proposed by EPA, to account for legitimate differences in ecology, hydrology, pollution sources, etc., EPA will conduct more rigorous review of the initial procedures. Once these procedures are approved, increased EPA review of individual TMDLs will be needed initially to confirm that they are appropriate. Thereafter, the same approval procedures as identified in 1 and 2 will be appropriate.
 4. If the State adopts standard procedures for the preparation of certain categories of TMDLs within the State (for example, TMDLs involving predominantly nonpoint source pollution from similar patterns of row crops in very similar watersheds), EPA will conduct more rigorous review of the initial procedures. Once these procedures are approved, increased EPA review of individual TMDLs will be needed initially to confirm that they are appropriate. Thereafter, the same approval procedures as identified in 1 and 2 will be appropriate.
 5. If the State adopts a case-by-case approach to TMDL development rather than adopting standard procedures, detailed individual review of TMDLs will be required.
 6. The State adopts conservative default values or assumptions for the preparation of TMDLs (such as a 7Q10 streamflow or conservative assumptions about background pollutant levels). So long as the State applies the conservative values or assumptions, less EPA oversight of individual TMDLs will be appropriate. If the State decides to apply less conservative values or assumptions for individual TMDLs, they will be targeted for increased EPA review.
 7. If the State believes that existing programs or requirements are adequate to attain the goals of the TMDL program, such program will be presumed adequate if the State shows that the existing program or set of requirements is comparable in all respects to the requirements of the TMDL program (complete functional equivalence), as applied to the individual water body. (In other words, rather than preparing a new "program" to meet the TMDL requirement, the State will formally submit the existing program and accompanying requirements as the TMDL for the subject water body, subject to EPA review and approval.
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Total Maximum Daily Load (TMDL) Program

SUBGROUP ON NONPOINT SOURCE-ONLY WATERS

MEMORANDUM

TO: Members of the TMDL Advisory Committee

FROM: Members of the Special Subgroup on Nonpoint Source-Only Waters

DATE: 5/23/97

RE: Addressing Nonpoint Source-Only Waters under Section 303(d) of the Clean Water Act

At the Committee meeting in Galveston, our special subgroup was created to examine the question of whether nonpoint source-only waters are or should be covered under Section 303(d)(1)(A) listing requirements. We have met twice by teleconference.

The attached discussion paper reviews the legal context and presents the following two main options:

1. All impaired waters, regardless of the types of sources present and including nonpoint source-only waters, are covered by the Section 303(d)(1)(A) listing requirement. This is consistent with EPA's current interpretation of the law.
2. Nonpoint source-only waters are not covered by Section 303(d)(1)(A) but, instead, are covered by Section 303(d)(3). TMDLs for these waters are required but are not subject to EPA review and approval.

The subgroup refined the options and the main supporting rationale for each of them but did not reach consensus on a preferred option. The subgroup's discussion paper will give you a sense of the arguments for the two primary options but does not necessarily give a complete analysis with which any member of the subgroup would entirely agree.

Much of our discussion focused on Congressional intent and the legislative history of the Clean Water Act, especially that relating to Sections 303 and 319. Because copies of the relevant legislative history would add considerable bulk to your materials (and they are otherwise publicly available), we did not include them here; however, you will see that there are references to the history in the attached paper. In addition, Bob Adler drafted a very helpful paper on statutory construction that we used in evaluating the history. Please let Martha

Prothro at Ross & Associates know if you would like to have a copy of the legislative history and/or the paper on statutory construction.

The attached paper also summarizes our discussion of a possible third option -- addressing all nonpoint sources exclusively under Section 319 Nonpoint Source Management Programs and not under Sections 303(d). However, the subgroup is not presenting this approach as one of its preferred options.

EPA representatives have indicated that it is highly unlikely EPA's current position on this issue will change during this Administration. However, the subgroup feels that it is important for the Committee to be aware of the main arguments for and against the various options and believes that the attached paper, while not necessarily complete or refined, will assist you in this regard.

The subgroup believes that the Listing Workgroup's presentation and charge to the small groups in Milwaukee will give members a good opportunity to consider the subgroup's issue. The Listing Workgroup's five "listing process proposals" include approaches consistent with both of the options developed by the subgroup. Therefore, we do not plan to make a separate presentation at the full Committee meeting.

Total Maximum Daily Load (TMDL) Program

NONPOINT SOURCE-ONLY WATERS

DISCUSSION PAPER

The TMDL FACA Committee established a subgroup of its members to take up the question of whether Section 303(d) of the Clean Water Act applies to waters impacted solely by nonpoint source (NPS) pollution. The subgroup included representatives from the Listing Workgroup, along with other members who volunteered to participate.

THE RELEVANT LEGAL REQUIREMENTS:

Section 303(d)(1)(A) of the Act provides:

Each State shall identify those waters within its boundaries for which the effluent limitations required by Section 301(b)(1)(A) and Section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

Sections 301(b)(1)(A) and (B) are the technology-based requirements for best practicable control technology (BPT) for industry and secondary treatment for municipal wastewater treatment plants, respectively. Note that there is no reference to best available technology economically achievable (BAT) requirements for industry under 301(b)(2), new source performance standards for industry under 306, or other provisions of the Act (such as pretreatment program requirements for dischargers to municipal sewers and stormwater control requirements for industry and municipalities) that would limit loadings from point sources; nor is there any reference to control programs for NPS.

Section 303(d)(3) of the Act provides, in part:

For the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (1)(A)... of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margins of safety, for those pollutants which the Administrator identifies under section 304(a)(2) of this title as suitable for such calculation....

Section 319(a)(1) of the Act provides, in part:

The Governor of each State shall, after notice and opportunity for public comment, prepare and submit to the [EPA] Administrator for approval, a report which --

(A) identifies those navigable waters within the State which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards or the goals and requirements of this Act;

(B) identifies those categories and subcategories of nonpoint sources, or, where appropriate, particular nonpoint sources which add significant pollution to each portion of the navigable waters identified under subparagraph (A) in amounts which contribute to such portion not meeting such water quality standards or such goals and requirements;

(C) describes the process, including intergovernmental coordination and public participation, for identifying best management practices and measures to control each category and subcategory of nonpoint sources and, where appropriate, particular nonpoint sources identified under subparagraph (B) and to reduce, to the maximum extent practicable, the level of pollution resulting from such category, subcategory, or source; and

(D) identifies and describes State and local programs for controlling pollution added from nonpoint sources to, and improving the quality of, each such portion of the navigable waters, including but not limited to those programs which are receiving Federal assistance under subsections (h) and (i).

Section 319(d)(3) provides that if a Governor fails to submit an assessment report as required by Section 319(a), the Administrator must prepare such an assessment report for the State.

Section 319 goes on to authorize State nonpoint source management programs to provide for implementation of best management practices and a federal grant program to support these programs once they are approved by EPA. EPA is not, however, authorized to establish a nonpoint source management program for a State that fails to do so.

Section 319 management programs focus on best management practices (BMPs) for nonpoint sources. There is no requirement that they be designed to meet water quality standards or water quality-based effluent limits.

EPA regulations (40 CFR Part 130):

- Section 40 CFR 130.2(j) defines "water quality limited segment" for 303(d) purposes, as:

Any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Act.

- Section 40 CFR 130.7(b), in describing the requirements for State identification of

water quality-limited segments still requiring TMDLs, provides:

(1) Each State shall identify those water quality-limited segments still requiring TMDLs within its boundaries for which:

(i) Technology-based effluent limitations required by sections 301(b), 306, 307, or other sections of the Act;

(ii) More stringent effluent limitations (including prohibitions) required by either State or local authority preserved by section 510 of the Act, or Federal authority (law, regulation, or treaty); and

(iii) Other pollution control requirements (e.g., best management practices) required by local, State, or Federal authority are not stringent enough to implement any water quality standards (WQS) applicable to such waters.

- Section 40 CFR 130.7(e) repeats the language of Section 303(d)(3) of the law and adds the following:

However, there is no requirement for such loads to be submitted to EPA for approval, and establishing TMDLs for those waters identified in paragraph (b) of this section shall be given priority.

In defining "TMDL", the regulations also indicate that the sum of point and nonpoint allocations, along with natural background, equals the TMDL for the water segment.

There appears to be no legislative history or case law that specifically addresses the question of whether NPS-only waters are to be included in 303(d)(1)(A) lists. However, the legislative history may shed some light on Congressional intent.

DISCUSSION AND OPTIONS:

EPA regulations require that all water quality-impaired waters be considered for 303(d)(1)(A) listing, regardless of the cause of the impairment. Only those impaired waters that are expected to meet WQS through required source management/control programs, including BMPs for NPS, may be omitted. All non-listed waters must be covered by TMDLs eventually, but those for non-listed waters are not subject to EPA review and approval and, under current EPA regulations, are assigned lower priority.

The TMDL Advisory Committee established a special subgroup to review the question of whether NPS-only waters are or should be covered by Section 303(d)(1)(A). There is consensus among members of the subgroup that NPS-only impaired waters should be tracked and that TMDLs should be completed for them at some point. The subgroup also agrees that more flexibility may be needed in the required timing for completing TMDLs for NPS only-impacted waters. NPS TMDLs may take longer to develop because of a lack of needed monitoring data and the need to rely heavily on stakeholder involvement to develop load allocations and buy-in to assure implementation. Based on experience to date, NPS TMDLs will also likely take longer to show in-stream results.

The TMDL Committee is considering whether to recommend changes to EPA's regulations. Therefore, on the question of whether NPS-only waters should be excluded from the Section

303(d)(1)(A) list, the first consideration is what options may be available under the statute. The primary options being discussed, and the arguments supporting them, are:

OPTION 1: Section 303(d)(1)(A) does apply to waters impacted solely by NPS. (This is the approach under current EPA regulations.)

Rationale: [NOTE: EPA is developing a document explaining its position on the applicability of Section 303(d)(1)(A) to NPS-impacted waters. It is expected that this document will be available to Committee members before the June 11-13, 1997 meeting in Milwaukee.]

Section 303(d)(1)(A) requires listing for all waters that will not meet standards after BPT and secondary treatment are implemented. BPT and secondary treatment, which apply only to point sources, are clearly inadequate for waters impacted only by NPS and therefore such waters must be listed if they are impaired. EPA has interpreted other provisions of Section 303, such as the WQS program and the Continuing Planning Process, as affecting all waters, not just those impacted by point sources. This is consistent with Congressional recognition, in 1972, of the contribution of NPS to certain impairments of water quality. A different reading could lead to the conclusion that point sources alone are responsible for solving water quality problems, a position which Congress did not intend.

There is evidence in the legislative history of the 1972 Act (of which Section 303 was a part) that Congress expected Section 303 to address water quality broadly, regardless of the source of any impairment. In particular, language in the March 11, 1972, House report (pp. 792-793), indicates that Congress was well aware of the contributions of NPS to water quality problems and that Congress did not expect point sources alone to bring about attainment of WQS. Section 208 of the Act, also enacted in 1972, specifically recognizes that "agriculturally and silviculturally related nonpoint sources" may need to be controlled to solve significant water quality problems in some watersheds. (See Section 208(b)(2)(F).) Similarly, in 1972, Congress authorized grants for waste treatment management plans to "provide control or treatment of all point and nonpoint sources...." (See Section 201(c).)

It has been suggested that Section 303(d)(1)(A) should be read narrowly to cover only waters for which BPT and/or secondary treatment requirements applied but were not stringent enough to meet WQS. If this narrow reading were adopted, then any water that met WQS because of BAT, new source performance standards, pretreatment or other requirements (besides BPT and secondary treatment) would need to be listed. Congress could not have intended this, since such attainment waters would not logically be high priority for TMDL development. Similarly, Congress could not have intended to exclude nonattainment waters simply because BPT and secondary treatment requirements did not apply to sources impacting the water. Section 303(d) should be read broadly in light of what Congress knew the water quality problems to be.

In 1972, Congress knew that NPS contributed to water quality impairments, but relied on Section 208 Areawide Waste Treatment Management Plans to address NPS. By 1987, Congress recognized that Section 208 planning efforts would not suffice and added Section 319 to the Clean Water Act. Section 319 was a new approach in the sense that it newly authorized funding for Statewide NPS management programs emphasizing best management practices (BMPs). In addition, it was viewed as a somewhat less than mandatory requirement for States to develop management programs. EPA had no "hammer" provision for States not adopting programs and no ability to establish a program if a State chose not to. States, however, could receive federal grants to help carry out their programs if they had them.

NPS management programs should provide mechanisms to help implement TMDLs but they do not substitute for TMDLs. In fact, Section 319 was intended to help achieve the goals of Section 303, not to replace them. Section 303(d)'s requirement to develop TMDLs is intended to produce refined targets to help assure attainment of WQS. Developing TMDLs therefore has value for planning and information purposes at the local, State and federal levels and in a wide variety of decision-making forums. Implementation of the TMDL is also important but is a separate issue.

With regard to implementation, TMDLs trigger no additional obligations on the part of any NPS. (In contrast, point source permits must require that they implement TMDLs.) For NPS TMDL implementation, States rely on whatever regulatory authorities or voluntary and incentive-based programs they have (often under their Section 319 Programs).

However, the fact that TMDLs do not impose mandatory duties on NPS does not mean that TMDLs for NPS-only waters would have no effect in bringing about improved water quality. While EPA (and some States) lack legal authority to enforce load allocations to NPS, other mechanisms exist to address NPS. For example, States (primarily with Section 319 grant funds from EPA) and federal agencies (notably the U.S. Department of Agriculture) manage a variety of incentive programs. NEPA requirements and Section 401 State certification requirements may affect NPS management on federal lands and require attainment of WQS. Habitat conservation plans under the Endangered Species Act and various State planning processes also affect NPS activities. Some States have enforceable agriculture and forest practices laws; some have so-called "bad actor" provisions that allow for enforcement against NPS should incentive programs prove to be ineffective; others have the authority to enforce WQS against both point sources and NPS. Monitoring, research and demonstration projects are also conducted in NPS-only waters. All of these efforts in NPS-only waters could be better focused and prioritized through the Section 303(d)(1)(A) listing process.

Including NPS-only waters in the Section 303(d) process helps to assure a comprehensive water quality planning process in which all impaired waters are considered and appropriate approaches for each may be selected. Comprehensiveness in considering waters under Section 303(d) may help avoid public confusion about water quality programs, since it could be difficult to explain why some impaired waters and not others are included. Consistent with this approach, Congress did not distinguish between NPS-only waters and other waters, such as those with both point and NPS contributions, when it wrote Sections 208, 303 and 319 of the Act.

If TMDLs are not developed for NPS-only waters, less EPA/State programmatic attention might be devoted to these waters, even though the impairments could be severe and/or the waters could have important beneficial uses (such as drinking water supply, cold water fishery, etc.) Users of these waters could feel that more attention is unfairly being given to other waters. Sources affected by TMDLs in other waters might also argue that they are unfairly being asked to do more than sources in NPS-only areas.

Option 1(a): Section 303(d)(1)(A) does apply to waters impacted solely by NPS; however, NPS-only waters may be assigned lower priority (more time) for TMDL development (and implementation) compared to other waters. This may be appropriate due to the time required to gather the information needed to develop the TMDL, to include the stakeholders so as to encourage their voluntary implementation of load allocations, and to produce water quality improvements after

implementation of BMPs. EPA guidance on priority-setting would explicitly describe these factors as relevant to priority-setting and pace. In addition, if the State (or locality) has a new program to implement BMPs, lower priority could be assigned until the program has had a chance to work, in the hope that developing a TMDL would ultimately be unnecessary.

OPTION 2: Section 303(d)(1)(A) does not apply to waters impacted solely by NPS pollution. Such waters are covered instead by Section 303(d)(3) and Section 319.

Rationale: Because Section 303(d)(1)(A) calls for listing waters not meeting standards after BPT and secondary treatment are implemented, the law envisions that there will be some point sources subject to BPT and/or secondary treatment on any waters that are listed. Since the Clean Water Act generally emphasizes point source control requirements, this would be consistent with EPA's historical programmatic approach.

There is evidence that Congress viewed the addition of Section 319 in 1987 as the first action under the Clean Water Act to address NPS. In 1986, when floor statements were made in the Senate regarding the Conference Report on the amendments that were later enacted in 1987, various Senators commented on the new Section 319. Several such statements referred to Section 319 as a "new program", to "begin", "as a first step", to address NPS pollution or used similar language. [132 Cong. Rec. S16424, October 16, 1986.] In contrast, while Congress may have been aware of NPS concerns in 1972 when Section 303(d) was enacted, it did not explicitly address the question of whether NPS-only waters were covered by Section 303(d)(1)(A).

The legislative history of Section 319 also shows that Congress intended for NPS management programs to reflect a different, nonregulatory approach with "considerable flexibility" for States and NPS owners/operators "to determine the type of program that will be needed".

Because Section 319 of the Clean Water Act requires States to identify waters impacted by NPS, the 303(d) listing requirement may be duplicative and unnecessary. All States have developed 319 management programs and would be subject to the penalty of loss of Section 319 funding if they should abandon or fail to implement them.

Congress has historically treated point sources and NPS differently, generally giving EPA less authority over NPS, and leaving NPS programs largely to State discretion. Reasons for Congress' taking a less directive approach for NPS may include, among other things: a recognition of the differences in terrain, soil types, precipitation and NPS-related activities among the States; an overriding concern with the safety and abundance of the nation's food supply; and a concern that knowledge about the efficacy of solutions to NPS water quality problems is limited.

Assuming that Congress intended for NPS-only waters to be covered under both Section 303(d) and Section 319, Section 303(d)(3) is a better provision to cover them than Section 303(d)(1)(A). The logical reading of Section 303(d)(1)(A) is that point sources must be present on waters listed under that provision. This would leave NPS-only waters to be covered by subparagraph (d)(3), which would also provide for completing a TMDL, but not for federal review and approval. This reading is more consistent with the approach of Section 319, which gives States the lead on nonpoint source implementation activities.

EPA has not fully implemented Section 303(d)(3) but could and should do so.

Although some TMDLs have been completed for Section 303(d)(3) waters, these waters have not been fully identified or tracked to assure TMDL development.

EPA is considering ways to assure that States provide for implementation of TMDLs completed under Section 303(d)(1)(A). In a 3/21/97 draft proposed policy memorandum from the Assistant Administrator for Water, various sanctions against States were suggested for use in cases where such TMDLs are not implemented. If such implementation were mandatory for NPS-only TMDLs, there would be an inconsistency with Congress' general discretionary approach for State NPS programs. However, if NPS-only waters were covered by Section 303(d)(3) instead, EPA review and approval would not be involved and there would be greater consistency with Section 319.

Certain other policy considerations also support excluding NPS-only waters from Section 303(d)(1)(A). EPA and State workloads for the TMDL program are already very high, even without inclusion of NPS-only waters. Limiting the scope of the program wherever possible could free up limited resources to do a better job dealing with other priority watersheds. In some, perhaps most, cases, EPA and States will have limited or no authority to enforce load allocations to NPS, so there is a risk that including NPS-only waters will result in a waste of effort. A more effective approach would be to rely on Section 319 for implementation in NPS-only waters, with greater attention being given to impaired waters in the allocation of resources under Section 319. This could be done through the State's Section 303(e) Continuing Planning Process as well as other program planning mechanisms.

If NPS-only waters are not required to be considered in the 303(d)(1)(A) listing program, States would still develop TMDLs for NPS-only waters under Section 303(d)(3), as they would for all other waters not covered by Section 303(d)(1)(A). However, States would have greater flexibility to develop TMDLs at their own pace. When a State would complete TMDLs for NPS-only waters under Section 303(d)(3) could depend on practical and environmental considerations, such as the beneficial uses of the NPS-only water, how many other impaired waters are listed under 303(d)(1)(A), how much work has been completed on required TMDLs, whether a court-imposed schedule for TMDL development is consuming available resources, whether the problem on the subject NPS-only water is amenable to effective controls, and whether other program activities have higher priority, etc.

It has been suggested that NPS-only waters could receive delayed attention if not included on 303(d)(1)(A) lists. However, EPA could encourage States to give 303(d)(3) waters higher priority by changing its regulation (to allow Section 303(d)(3) waters to receive the same priority consideration as Section 303(d)(1)(A) waters, at the State's discretion). Further, it is possible that delay would occur even under the more inclusive approach of option 1 if, for example, Section 303(d)(1)(A) lists were segmented, with some categories receiving lower priority.

Possible suboptions under Option 2:

There may be suboptions under Option 2 that could be developed in more detail. For example, rather than relying only on Section 303(d)(3) for covering NPS-only waters, States might be required to track NPS-only waters under Section 303(e) as part of their Continuing Planning Process. The Section 319 NPS listing process might be reviewed and modified to distinguish NPS-only waters from waters with both point sources and NPS and to serve some of the purposes of Section 303 for the NPS-only waters.

ADDITIONAL DISCUSSION:

"Blended" Waters:

The subgroup also briefly discussed the implications of the options for "blended waters" -- those with both point source and NPS contributions. One member noted that covering NPS-only impaired waters under Section 303(d)(3) and all other impaired waters under Section 303(d)(1)(A) would be an imperfect solution to the problems of concern to the NPS community regarding pace and implementation. TMDLs for blended waters may be the most difficult of all TMDLs to develop and implement, while some NPS-only TMDLs may be relatively simple; yet the pace of TMDL development for blended waters would be unaffected by Option 2. In addition, Option 2 would not necessarily solve the pace problem for NPS-only waters. Section 303(d)(3) waters are not subject to EPA review and approval, but if EPA's regulation were modified, States could still assign these waters relatively high priority in scheduling TMDL development and EPA could still require implementation of Section 303(d)(3) TMDLs through State oversight and sanction approaches.

Possible Alternative Section 319 Approach:

It has been suggested that no NPS should be included in the TMDL program because Section 319 is the exclusive mechanism for addressing NPS and it relies on BMPs. The argument is that since TMDLs could result in more stringent control requirements than those achievable through BMPs or could be difficult/impossible to translate into BMPs, TMDLs cannot be a proper basis for setting NPS targets. Loadings for NPS are considered difficult, if not impossible, to determine. Even identifying NPS contributors on a water may be extremely difficult. Monitoring for compliance could similarly be difficult. Some have suggested that these were the very reasons for Section 319's alternative approach to addressing NPS pollution.

There was some sympathy for this argument among some subgroup members. Others, however, strongly disagreed. One consideration discussed was whether Congress intended for point sources to assume all load reduction responsibilities in "blended waters", which may be the majority of impaired waters. One view was that Congress clearly intended all sources to be considered (as the rationale for Option 1 indicates). In fact, the Supreme Court, relying partly on Section 303(d) and Section 208, has rejected the argument that a new point source would bear the entire burden of reductions to achieve WQS. Another view was that Congress' emphasis on point sources in the law and the 1972 legislative debate on Section 303 indicates that point sources are to bear most of the responsibility for meeting standards, with Sections 208 and 319 providing for NPS controls to reduce some of that burden through a separate, alternative approach. One member noted that the 1972 legislative history deals with the debate over whether water quality standards would be continued along with the new technology-based control standards; therefore, reliance on this debate to decide how much Congress was concerned about NPS may be inappropriate.

A concern clearly was the extent to which TMDLs might result in (or constitute in and of themselves) a mandatory water quality-based limit that could be enforced against NPS. If TMDL load allocations were clearly nonregulatory targets, with BMPs and voluntary approaches and "phased TMDLs" as the primary mechanisms for implementation, then the subgroup members from the NPS community might have less concern. Although EPA has said that the TMDL is a planning mechanism and that States may use regulatory or nonregulatory approaches for implementation, there were concerns that EPA's recent draft policy memorandum on implementation emphasized sanctions for States that do not implement. This may be interpreted by some as requiring States to have NPS regulatory programs based on TMDL allocations. (EPA indicated that a revised version of that policy memorandum will

put more emphasis on incentives rather than "hammers".)

One member pointed out that if NPS were controlled only by BMPs, without a water quality basis derived from the TMDL process, there would be some risk of technology-based requirements being imposed on NPS "for technology's sake" -- something the point source community has experienced and often criticizes. Reliance on BMPs could ultimately be more costly overall for the NPS community than a more targeted water quality-based approach. Other subgroup members agreed that water quality goals should be used in the planning process for NPS management programs so that BMPs are applied where they are needed or, as in Option 2, TMDLs could be done under Section 303(d)(3) for this purpose.
